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FINAL PRELIMINARY ASSESSMENT/SITE INSPECTION REPORT MUNITIONS RESPONSE
PROGRAM SITE UXO 17 FORMER FIRING POSITION 2 (ASR#2.212) MCB CAMP LEJEUNE

NC
2/1/2012
CH2M HILL

Final

**Preliminary Assessment/Site Inspection Report
MMRP Site UXO-17, Former Firing Position 2
(ASR#2.212)**

Marine Corps Base Camp Lejeune
Jacksonville, North Carolina



Prepared for

Department of the Navy
Naval Facilities Engineering Command
Mid-Atlantic

Contract No.
N62470-08-D-1000
CTO-141 and WE41

February 2012

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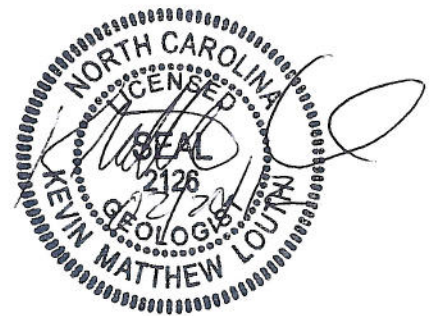
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Contract N62470-08-D-1000**

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Executive Summary

This document presents data, results, and conclusions for the Preliminary Assessment/ Site Inspection (PA/SI) conducted at Site Unexploded Ordnance (UXO)-17 – Firing Position 2 (Archives Search Report [ASR] Site #2.212) located at Marine Corps Base Camp Lejeune (MCB CamLej, or the Base) in Jacksonville, North Carolina. The PA/SI was conducted to evaluate the potential presence of munitions and explosives of concern (MEC) and to characterize potential impacts to soil, sediment, surface water, and groundwater related to historical activities within Site UXO-17.

Site UXO-17 is a former firing position located east of Piney Green Road and north of the current Base landfill. The PA/SI investigation area encompasses a 16-acre area defined as former Firing Position 2 by the ASR (**Appendix A**).

The PA/SI was performed in three phases. Phase I included investigation of a 4-acre area in the center of the site with environmental sampling of surface and subsurface soil and groundwater, a geophysical survey of 100% of accessible portions of the investigation area, and intrusive investigation of anomalies selected as representing potential subsurface MEC. Phase II investigation activities were performed to assess the surrounding 12 acres of the site with environmental sampling of surface and subsurface soil, groundwater, sediment and surface water, a geophysical survey of approximately 9% of the 12-acre area, and intrusive investigation of the anomalies selected as representing potential subsurface MEC. Phase III investigation activities included environmental sampling of groundwater in the vicinity of a buried leaking drum discovered and removed during the Phase I investigation. Field activities were conducted in September and October 2008, and November 2010 through August 2011.

In the Phase I investigation, environmental samples were analyzed for explosives residues (including pentaerythritol tetranitrate [PETN] and nitroglycerine for surface and subsurface soils only) and the Resource Conservation and Recovery Act metals: arsenic, barium, cadmium, chromium, lead, mercury, and selenium. In the Phase II investigation, samples were analyzed for explosives residues (including PETN and nitroglycerine) and a more-expansive list of Resource Conservation and Recovery Act metals: aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc. In addition, three Phase II investigation groundwater samples MR17-MW10, MW-11, and MW-12, collected at locations closest to onsite surface water, were analyzed for dissolved metals and hexavalent chromium. In the Phase III investigation, groundwater samples were analyzed for volatile and semivolatile organic compounds to assess potential impact to groundwater from a buried leaking drum (discovered and removed during the Phase I investigation).

A human health risk screening, including a risk ratio evaluation, was performed based on surface soil, subsurface soil, sediment, surface water, and groundwater analytical results from the Phase I, Phase II, and Phase III investigations. Results of the HHRS indicate that there are no unacceptable risks identified for human receptors exposed to site media. An

ecological risk screening was performed based on surface soil, subsurface soil, sediment, surface water, and groundwater analytical results. Results of the ecological risk screening indicate that there are no unacceptable risks identified for ecological receptors exposed to site media.

A total of 1,310 geophysical anomalies and 21 saturated response areas (SRAs) were identified in the 4-acre portion of the site, where 100% digital geophysical mapping was completed. A SRA is defined as an area where a subsurface geophysical anomaly or multiple subsurface anomalies are present for which the signal is so strong that individual anomalies cannot be distinguished. A total of 662 anomalies were identified in the 12-acre portion of the site, where 9% of the area was surveyed along transects. An approximately 1-acre area in the southeast corner of the site was inaccessible because it was inside the fence line of the active landfill, and approximately 1.9 additional acres could not be surveyed as a result of debris pits and wetland areas that prevented access. Intrusive investigation was performed for all of the anomalies and saturated response areas identified in the 4-acre portion of the site, and 70 selected anomalies within the 12-acre portion of the site.

One MEC item, a $\frac{1}{4}$ lb Charge Supplementary, TNT, for an artillery projectile was identified at a depth of 3 feet below ground surface and disposed via detonation on March 30, 2011. The item was classified as discarded military munitions.

Three post-detonation surface soil samples were collected in the resulting crater and submitted for laboratory analysis. Four explosives residues (1,3,5-trinitrobenzene, 2-amino-2,6-dinitrobenzene, 4-amino-2,6-dinitrotoluene, and 1,3,5-trinitro-1,3,5-triazacyclohexane [RDX]) were detected in at least one sample, but none of the detected concentrations of explosives residues exceeded regulatory screening criteria. Arsenic was detected in excess of both twice the Base background levels and regulatory screening criteria (maximum concentration 1.19 milligrams per kilogram). The detected concentration was comparable to concentrations detected in other surface soil samples.

In addition to the MEC item disposed onsite, 279 munitions-related items were identified that were certified as Material Documented As Safe and shipped under chain of custody control, and disposed via smelting offsite. These items included: 5.56mm and 7.62mm blank and expended ammunition, practice mine parts, artillery primers, practice 40mm grenade bases, pieces of fuzes, expended ground signal flares and pieces, and ground signal flare launchers.

No additional environmental or MEC investigation is recommended at Site UXO-17, Former Firing Position 2, based on the following:

- No unacceptable human health or ecological risks were identified from exposure to site media.
- Intrusive anomaly investigations were completed over 100% of the 4-acre firing position and the risk of contact with MEC was significantly reduced.
- Intrusive anomaly investigations were completed over 9% of the surrounding 12-acre area and no MEC items were encountered. It is anticipated that the site will be used as an above grade expansion area for the Base landfill, potentially covering any remaining subsurface debris.

Prior to MILCON proceeding at the site, it is recommended that all site personnel conducting subsurface/intrusive activities receive "3R" munitions awareness training for recognizing, retreating, and reporting potential MEC hazards. It is also recommended that on-call construction support be provided from MCB CamLej Explosive Ordnance Disposal personnel or a qualified UXO contractor for inspection and disposal of suspected MEC/MPPEH that may be unearthed.

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Acronyms and Abbreviations

°C	degrees Celsius
µg/L	microgram(s) per liter
ASR	Archives Search Report
Base	Marine Corps Base Camp Lejeune (also MCB CamLej)
BBG	Base background
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLEAN	Comprehensive Long-term Environmental Action – Navy
COPC	constituent of potential concern
CTO	contract task order
DGM	digital geophysical mapping
DMM	discarded military munitions
DO	dissolved oxygen
DPT	direct-push technology
DU	decision unit
EcoSSL	Ecological Soil Screening Level
EPA	U.S. Environmental Protection Agency
ESS	Explosives Safety Submission
ESV	ecological screening value
GPO	geophysical prove out
GPS	global positioning system
HHRS	human health risk screening
HI	hazard index
HQ	hazard quotient
IDW	investigation-derived waste
IS	Incremental Sampling
MC	munitions constituent
MCB CamLej	Marine Corps Base Camp Lejeune (also the Base)
MCL	maximum contaminant level
MDAS	material documented as safe
MEC	munitions and explosives of concern
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mm	millimeter
MMRP	Military Munitions Response Program
mS/cm	milliSiemens per centimeter

MPP	Master Project Plans
MPPEH	material potentially presenting an explosive hazard
MR	munitions response
MRP	Munitions Response Program
MS/MSD	matrix spike/matrix spike duplicate
mV	millivolt
NAVFAC	Naval Facilities Engineering Command
Navy	Department of the Navy
NCAC	North Carolina Administrative Code
NCDENR	North Carolina Department of Environment and Natural Resources
NCGWQS	North Carolina Groundwater Quality Standards
NC SSLs	NCDENR Federal Remediation Branch Target Soil Screening Levels
NRWQC	National Recommended Water Quality Criteria
NTU	nephelometric turbidity units
ORP	oxidation-reduction potential
PA/SI	Preliminary Assessment/Site Inspection
PETN	pentaerythritol tetranitrate
PPE	personal protective equipment
PVC	polyvinyl chloride
QA/QC	quality assurance/ quality control
RCRA	Resource Conservation and Recovery Act
RDX	1,3,5-trinitro-1,3,5-triazacyclohexane
RSL	regional screening level
RTK	real time kinematic
SOP	standard operating procedure
SRA	saturated response area
SSL	soil screening level
SVOC	semivolatile organic compound
TCLP	Toxicity Characteristic Leaching Procedure
UCL	upper confidence limit
UFP-SAP	Uniform Federal Policy – Sampling and Analysis Plan
UXO	unexploded ordnance
VOC	volatile organic compound

SECTION 1

Introduction

This report documents the findings of a Preliminary Assessment/Site Inspection (PA/SI) conducted at U.S. Marine Corps Military Munitions Response Program (MMRP) site Unexploded Ordnance (UXO)-17 – Former Firing Position 2 (Archives Search Report [ASR] #2.212) located at Marine Corps Base Camp Lejeune (MCB CamLej) in Jacksonville, North Carolina (**Figure 1-1**).

The PA/SI was conducted under the Naval Facilities Engineering Command (NAVFAC) Multi-Media Program, Contract N62470-07-D-0501, Task Order 009 and the Comprehensive Long-term Environmental Action – Navy (CLEAN) Contract N62470-08-D-1000, Contract Task Orders 141 and WE41.

Site investigation activities were conducted in accordance with the following documents:

- Site -specific Work Plan Addendum for Focused Preliminary Assessment/Site Inspection, Landfill Firing Position 2 , Marine Corps Base Camp Lejeune, Jacksonville, North Carolina (Focused PA/SI Work Plan) (CH2M HILL, 2008a)
- Addendum to the Site Specific Work Plan Addendum for Focused Preliminary Assessment/Site Inspection Activities at Former Firing Position 2 (Site UXO-17), Marine Corps Base Camp Lejeune, Jacksonville, North Carolina (Focused PA/SI Work Plan Addendum) (CH2M HILL, 2010a)
- Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan) Preliminary Assessment/Site Inspection; Unexploded Ordnance (UXO) Site UXO-17 (ASR #2.212), Former Firing Position 2, Marine Corps Base Camp Lejeune, Jacksonville, North Carolina (Uniform Federal Policy – Sampling and Analysis Plan [UFP-SAP]) (CH2M HILL, 2010b)
- Site-specific Work Plan Addendum for Intrusive Investigation for Military Munitions Response Program Sites: UXO-01 – Former Live Hand Grenade Course (ASR #2.23), UXO-01 - Former Gas Chamber (ASR #2.79a, b, c), UXO-02 - Former Unnamed Explosive Contaminated Range (ASR #2.201), UXO-07 – Former Practice Hand Grenade Course (ASR #2.77a and #2.77b), UXO-11 - Former B-5 Practice Hand Grenade Course (ASR #2.81), UXO-14 - Former Indoor Pistol Range (ASR #2.199) and Former Gas Chamber (ASR #2.200), UXO-17 - Former Firing Position 2 (ASR #2.12), and UXO-21 - Former D-Area Gas Chamber (2D MAR DIV) (ASR #2.204), Marine Corps Base Camp Lejeune, Jacksonville, North Carolina (Expanded SI Work Plan) (CH2M HILL, 2011)
- Explosives Safety Submission for Munitions Response Activities, Former Firing Position 2, Marine Corps Base Camp Lejeune, Jacksonville, North Carolina (Explosives Safety Submission [ESS]-115) (CH2M HILL, 2008b)
- Amendment 1, Explosives Safety Submission for Munitions Response Activities, Former Firing Position 2, Marine Corps Base Camp Lejeune, Jacksonville, North Carolina (ESS-116) (CH2M HILL, 2009)

- Amendment 2, Explosives Safety Submission for Munitions Response Activities, Former Firing Position 2, Marine Corps Base Camp Lejeune, Jacksonville, North Carolina (ESS-117) (CH2M HILL, 2010c)
- *Munitions Response Program (MRP) Master Project Plans* (Munitions Response Program [MRP] Master Project Plans [MPP]) (CH2M HILL, 2008c)

1.1 Objectives and Approach

The objective of this PA/SI was to assess potential contamination of environmental media and to evaluate the nature and extent of potential subsurface munitions and explosives of concern (MEC) at Site UXO-17 that may have resulted from former munitions use. The technical approach employed to meet the stated objectives included:

Identifying historical activities that may have resulted in environmental contamination.

Evaluating the potential presence and nature of munitions constituents (MC) contamination by conducting an investigation of surface and subsurface soil, sediment, surface water, and groundwater.

Evaluating the potential presence and nature of volatile organic compound (VOC) and semi-volatile organic compound (SVOC) contamination by conducting an investigation of groundwater in the vicinity of a buried leaking drum (discovered and removed during the Phase I investigation).

Preparing ecological and human health risk screenings using analytical data collected at the site.

Completing a geophysical survey to evaluate the number and density of geophysical anomalies representing potential subsurface MEC.

Conducting a MEC intrusive investigation of all selected geophysical anomalies to evaluate the nature and density of MEC that may be present.

1.2 Report Organization

This PA/SI report is organized as follows:

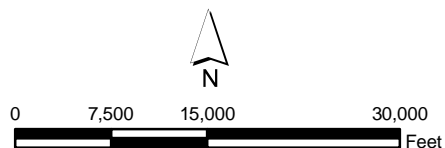
- Section 1, Introduction
- Section 2, Site Background
- Section 3, Field Investigation Activities
- Section 4, Investigation Results
- Section 5, Human Health Risk Screening
- Section 6, Ecological Risk Screening
- Section 7, Conclusions and Recommendations
- Section 8, References

Appendices A through J provide supporting information summarized in this report.



Legend

- Highways
- Site UXO-17 Boundary
- Installation Boundary



1 inch = 15,000 feet

Figure 1-1
Base Location Map
Site UXO-17, Firing Position 2
PA/SI Report
MCB CamLej
North Carolina

Site Background

This section presents a summary of regional and site-specific information, including location, site setting, physical characteristics, and history.

2.1 MCB CamLej Location and Description

MCB CamLej covers approximately 236 square miles in Onslow County, North Carolina, and is bisected by the New River, which flows in a southeasterly direction toward the Atlantic Ocean. Construction of MCB CamLej began in 1941 with the objective of developing the world's most complete amphibious training base. The mission of MCB CamLej is to maintain combat-ready units for expeditionary deployment. MCB CamLej provides housing, training facilities, logistical support, and administrative supplies for Fleet Marine Force units and other assigned units. The Base and surrounding community is home to an active-duty, dependent, retiree, and civilian population of approximately 180,000 people. Land use surrounding MCB CamLej is varied. Mainly commercial properties are located along the northern boundary, with a mix of agricultural lands and residential areas located along the eastern and western boundaries of the Base. The southern boundary of MCB CamLej extends to the New River and Atlantic Ocean.

2.2 Site Setting

Site UXO-17 includes approximately 16 acres of land located east of Piney Green Road and north of the current Base landfill (**Figure 2-1**). This site is accessible from Old Bear Creek Road, which crosses the southern portion of the investigation area.

The 4-acre Phase I investigation area is located in the interior of Site UXO-17, as shown on **Figure 2-1**, and is the estimated location of the former firing position. The Phase I investigation area was selected for the initial field activities based on observed site conditions, including soil mounds, "fox holes", and paths, and interviews with Base personnel.

The 12-acre Phase II investigation consists of the remaining area within the UXO-17 boundary. A fence associated with the Base landfill crosses the Phase II investigation area along the southeast boundary, and approximately 1 acre of the site is located within the active landfill (**Figure 2-1**). Old Bear Creek Road provides access to the Base landfill.

The site lies approximately 23 feet above mean sea level. The site topography gently slopes to the southeast, with little relief except for manmade soil mounds and "foxholes" located throughout the site. Surface water runoff at Site UXO-17 flows into localized drainage ditches that in turn drain to Wallace Creek. Surface water also ponds in the south-central portion of the site. The site is mostly wooded. During the PA/SI, vegetation impeding DGM survey was removed over a 4-acre area of the site and along meter-wide transects.

2.3 Site History

In July 2008, CH2M HILL conducted a detailed review of existing information related to historical activities at Site UXO-17 that could have resulted in releases of hazardous substances within the area of investigation. This review also included interviews with current and former site personnel. The information obtained from this effort is documented in the ASR (**Appendix A**) and summarized below.

Site UXO-17 was reportedly used as a gun position from the 1950s through at least 1985 (CH2M HILL, 2008c). The current MCB CamLej Range Safety Officer stated that 105 millimeter (mm) and 155 mm howitzers were used at this site to fire practice rounds into the K-2 and G-10 Impact Areas (CH2M HILL, 2008c). Base personnel indicated that projectiles fired from Site UXO-17 would have been directed to the south toward the G-10 Impact Area, with material storage at the site being located north of the firing locations, which was consistent with the orientation of paths and “foxholes” observed at the site. The G-10 Impact Area is approximately 4 miles southeast of Site UXO-17.

In addition, the MCB CamLej Range Control Officer stated that other types of artillery (4.2--inch mortars, 175 mm guns, 8-inch howitzers, and 120 mm mortars) also may have been used, with unused projectile propellant being burned on the ground.

As a result of the usage and type of training conducted at the site, discarded military munitions (DMM) was potentially anticipated to be present as well as ammunition packaging and range residue. No chemical warfare materiel was reported to have been used at this site.

2.4 Previous Investigations

No known previous investigations for MC or potential subsurface MEC have been completed prior to the PA/SI.

2.5 Overview of PA/SI Field Activities

The PA/SI at Site UXO-17 was completed in three phases. Phase I consisted of investigation of a 4-acre area in the center of the site, with environmental sampling of surface soil, subsurface soil and groundwater and a geophysical survey of 100% of accessible portions of the Phase I investigation area. An intrusive investigation of selected anomalies identified within the Phase I investigation area was also performed.

Phase II investigation activities were performed to assess the surrounding 12 acres with environmental sampling of surface soil, groundwater, sediment, and surface water and a geophysical survey of approximately 9% of the 12-acre area. An intrusive investigation of selected anomalies identified within the Phase II investigation area was also performed.

Phase III investigation activities included environmental sampling of groundwater in the vicinity of a buried leaking drum discovered and removed during Phase I.

Table 2-1 summarizes the activities conducted during the investigation. The investigation area is shown on **Figure 2-1**.

TABLE 2-1
 Timeline of Site UXO-17 PA/SI Field Activities
Site UXO-17 Former Firing Position #2
MCB CamLej, North Carolina

Investigation Phase	Investigation Name	Tasks	Investigation Dates
Phase I (4-acre area)	Focused SI	Digital geophysical mapping (DGM), well installation, environmental sampling	September – October 2008
	Intrusive Investigation	Investigation of selected anomalies and saturated response areas	November 2010-April 2011, May 2011, June 2011
Phase II (12-acre area)	Expanded SI	DGM, well installation, environmental sampling;	November– December 2010
	Intrusive Investigation	Investigation of remaining selected anomalies	April 2011, August 2011
Phase III	Groundwater Sampling	Additional monitoring well installation and groundwater sampling	July 2011

2.6 Regional Climate

Regional climate at MCB CamLej is discussed in the MRP MPP (CH2M HILL, 2008c).

2.7 Regional Geology and Hydrogeology

Regional geology at MCB CamLej is discussed in the MRP MPP (CH2M HILL, 2008c).

2.8 Site Geology and Hydrogeology

Subsurface investigation activities conducted during the PA/SI provided site-specific information relating to site geology and hydrogeology.

The shallow soils predominantly consist of brown, tan, gray, and white fine-grained sands and silty sands, extending to depths of 11 feet below ground surface (ft bgs). Discontinuous layers of gray, sandy clay are present at depths of 3 to 3.75 ft bgs in the west portion of the site, and white clay and clayey silt at 2.5 to 5 feet bgs deepening to 10 feet bgs was observed in the east portion of the site. Deeper soils were generally silty clay and clayey silt and poorly graded sands, extending to the maximum depth of the investigation, 16 feet bgs. The water table was encountered at depths ranging from 3 to 11 feet bgs.

Site-specific hydrogeologic information was derived from the installation of 14 shallow monitoring wells screened above the Castle Hayne confining unit in the surficial aquifer. **Table 2-2** summarizes groundwater elevations and well construction details. **Figure 2-2** depicts the potentiometric surface of the water table on July 26, 2011 and indicates that groundwater flow was to the north-northwest, with a hydraulic gradient of approximately

0.018 foot/foot, based on the July 2011 depth to groundwater measurements. Soil boring logs and well construction diagrams can be found in **Appendix B**.

Surface water from Site UXO-17 flows to Wallace Creek and then into the New River. The New River flows into the Atlantic Ocean via New River inlet (MCB CamLej, 2002).

2.9 Conceptual Site Model

Figure 2-3 depicts the conceptual site model (CSM) of the site, including physical conditions, potential sources of contaminants, and potential current and future receptors.

TABLE 2-2

Groundwater Elevation and Well Construction Information

*Site UXO-17 Former Firing Position #2**MCB CamLej, North Carolina*

Well ID	Date Installed (mm/dd/yy)	Screened Interval (ft bgs)	Bottom of Well (ft bTOC)	Top of Casing Elevation (ft msl)	Ground Elevation (ft msl)	Depth to Water July 26, 2011 (ft bTOC)	Groundwater Elevation July 26, 2011 (ft msl)
FP2-TW01	10/07/08	4-14	14.00	21.71	21.35	NA	NA
FP2-TW02	10/07/08	4-14	14.00	22.66	22.30	NA	NA
FP2-TW03	10/07/08	5-15	15.00	23.37	23.05	NA	NA
FP2-TW04	10/08/08	6-16	16.00	24.47	24.38	NA	NA
MR17-TW09	12/01/10	3-13	13.00	37.62	33.98	12.84	24.78
MR17-TW10	12/01/10	3-13	13.00	38.54	34.89	13.45	25.09
MR17-TW11	12/01/10	4-14	14.00	34.44	31.73	11.16	23.28
MR17-TW12	12/02/10	5-15	15.00	37.07	34.04	13.87	23.20
MR17-TW13	12/02/10	7-17	17.00	29.57	26.56	14.74	14.83
MR17-TW14	12/03/10	7-17	17.00	24.87	21.94	15.62	9.25
MR17-TW15	12/02/10	3-13	13.00	21.49	17.74	10.04	11.45
MR17-TW16	07/18/11	7-17	17.00	27.03	24.35	12.52	14.51
MR17-TW17	07/18/11	6-16	16.00	24.74	21.98	12.11	12.63
MR17-TW18	07/18/11	6-16	16.00	25.83	23.04	11.04	14.790

Notes:

ft bgs = feet below ground surface

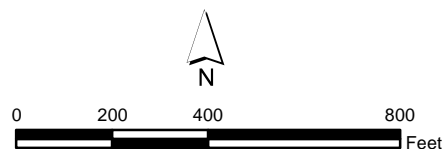
ft bTOC = feet below top-of-casing

ft msl = feet above mean sea level



Legend

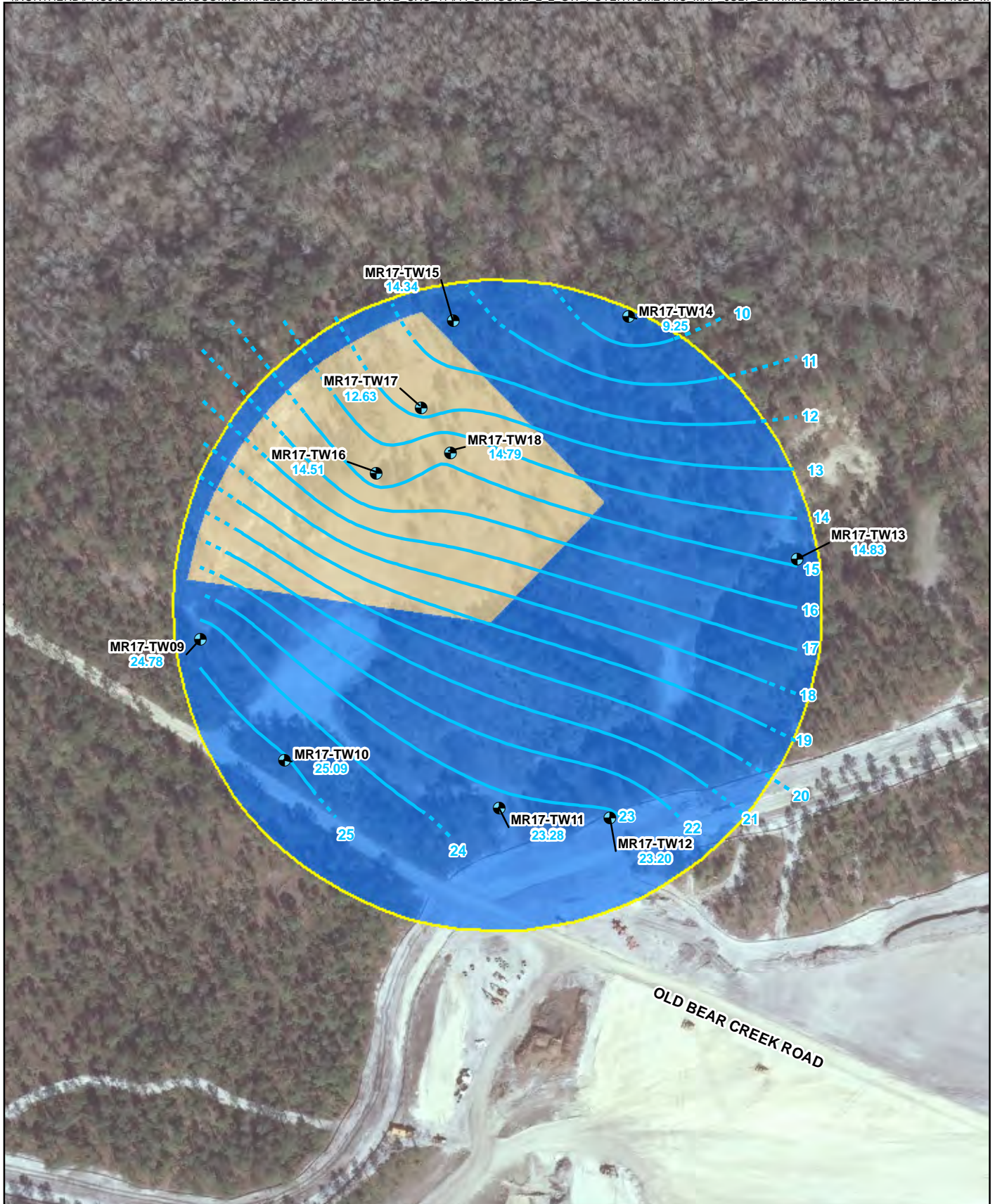
- Phase I Investigation Area (4 acres)
- Phase II Investigation Area (12 acres)
- Site UXO-17 Boundary
- Base Boundary



1 inch = 400 feet

Figure 2-1
Site Location Map
Site UXO-17, Firing Position 2
PA/SI Report
MCB CamLej
North Carolina





Legend

- Permanent Well Locations
- Potentiometric Contour (dashed where inferred)
- Phase I Investigation Area (4 acres)
- Phase II Investigation Area (12 acres)
- Site UXO-17 Boundary

Groundwater elevations in ft msl are presented for each groundwater monitoring well in the July 2011 water level survey.

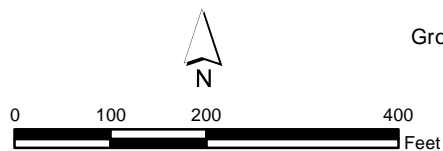


Figure 2-2
Groundwater Potentiometric Map (July 2011)
Site UXO-17, Firing Position 2
PA/SI Report
MCB CamLej
North Carolina



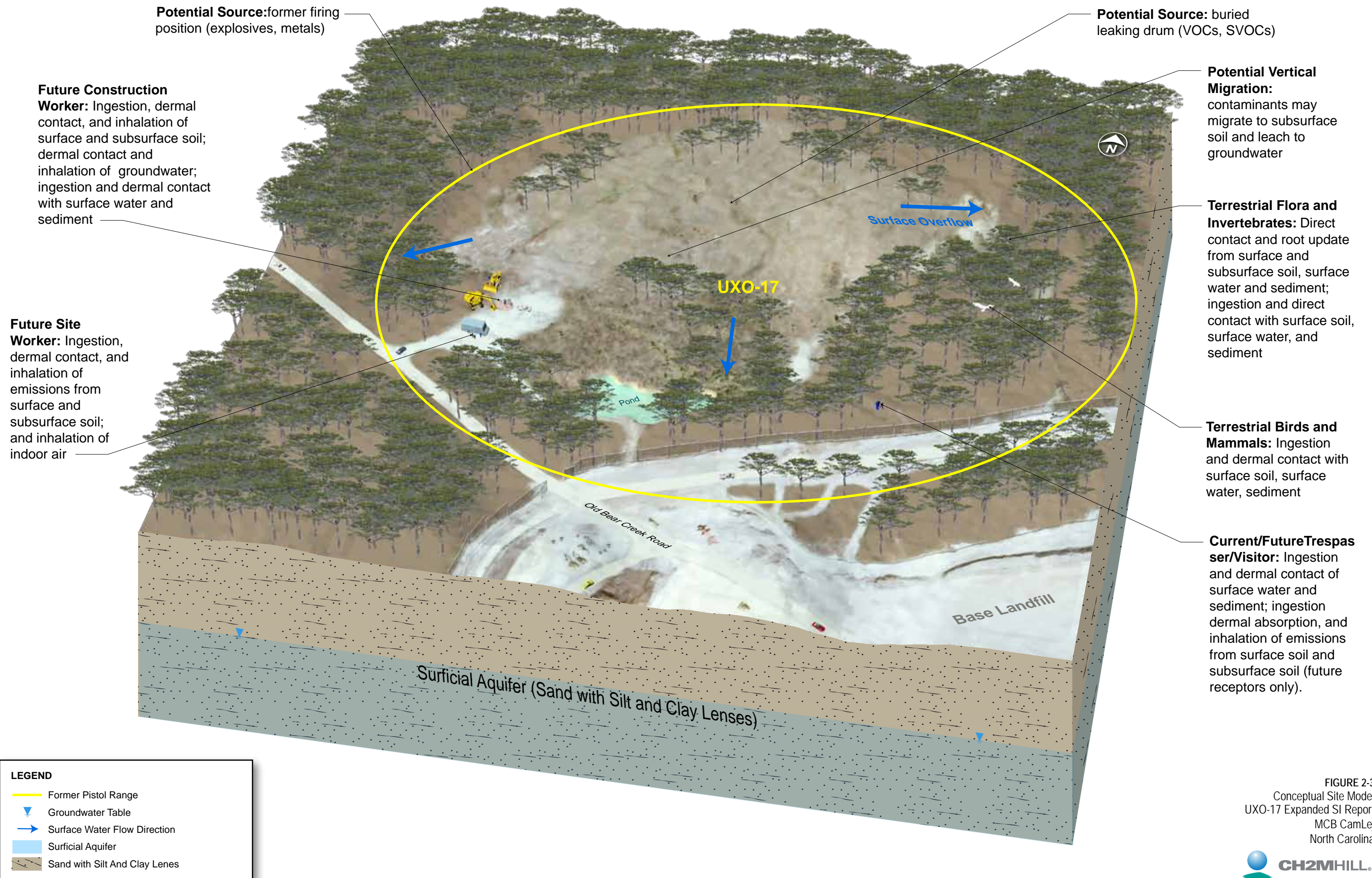


FIGURE 2-3
Conceptual Site Model
UXO-17 Expanded SI Report
MCB CamLej
North Carolina

Field Investigation Activities

The investigation of Site UXO-17 was performed in three phases in 2008, 2010, and 2011, as described below.

The technical approach described in the Focused PA/SI Work Plan, Focused PA/SI Work Plan Addendum, UFP-SAP, and Expanded SI Work Plan was developed by the MCB CamLej Tier I Partnering Team, which consisted of representatives from the Navy, MCB CamLej, EPA Region 4, and NCDENR.

3.1 Phase I Investigation Activities

The Phase I investigation area addressed a 4-acre area in the central portion of Site UXO-17, as shown on **Figure 2-1**. The Phase I investigation area activities were conducted in September and October 2008 and included site preparation activities; geophysical survey of 100 percent of the accessible portions of the 4-acre area; and environmental sampling of surface soil, subsurface soil, and groundwater. In December 2010 and April through June 2011, intrusive investigation was completed for selected geophysical anomalies and saturated response areas (SRAs), areas where a subsurface geophysical anomaly or multiple subsurface anomalies were present for which the signals were so strong that individual anomalies could not be distinguished.

3.1.1 Land Surveying

Land surveying within the Phase I investigation area of Site UXO-17 was performed by Lanier Surveying, a North Carolina-licensed surveyor from Cedar Point, North Carolina. The locations of the 4-acre site boundary, DGM grids, and sampling decision units (DUs) were surveyed in September 2008. The 50-meter × 50-meter DGM grids coincided with the existing Base-wide grid system established for munitions response (MR) activities, and was completed as shown on **Figure 3-1**. After the DGM grid layout was complete, the DU layout survey was conducted to identify the boundary of each DU shown on **Figure 3-2**. Geophysical quality control (QC) seed locations were also surveyed.

Following completion of the environmental sampling activities in October 2008, the coordinates and elevations of the temporary monitoring wells were surveyed. Top-of-casing and ground surface elevations were measured to the nearest 0.01 foot, while horizontal locations were surveyed to an accuracy of 0.25 feet. . Lanier Surveying provided all survey results for incorporation into the CH2M HILL geographic information system. Land surveying data are presented in **Appendix C**.

3.1.2 Vegetation Clearance

East Coast Land Improvement of Swansboro, North Carolina, was subcontracted to clear vegetation to facilitate access to the site for the DGM and environmental sampling activities in

the Phase I investigation area. Vegetation smaller than 3 inches in diameter was cut to within 6 inches of the ground surface over the entire 4-acre area.

3.1.3 Digital Geophysical Mapping

DGM was performed during September 23 - 28, 2008 to evaluate the frequency and distribution of geophysical anomalies at Site UXO-17 that represent potential subsurface MEC. DGM was performed by NAEVA Geophysics, Inc. of Charlottesville, Virginia, with QC performed by both NAEVA and CH2M HILL's MR QC Geophysicist. DGM was conducted over the entire 4-acre portion of the site, except for areas that could not be accessed because of irregular terrain or construction debris, such as concrete slabs and concertina wire. (Construction debris was removed during intrusive investigation, and the remaining anomalies were investigated using analog magnetometers). The DGM data were collected using a two-coil Geonics EM61-MK2 (EM61) operated in wheel mode configuration, with data positioning provided by a real time kinematic (RTK) global positioning system (GPS). The Phase I geophysical survey area is shown on **Figure 3-1**.

Phase I DGM was performed in accordance with the Focused PA/SI Work Plan (CH2M HILL, 2008a). Before the mapping began, a geophysical prove out (GPO) was completed to test and evaluate the selected geophysical equipment and to ensure the equipment met existing project measurement quality objectives. This GPO was conducted at the existing GPO plot set up and seeded by CH2MHILL at the former Knox Trailer Park (Site UXO-04). A threshold of 3 millivolts (mV) was chosen for the selection of geophysical anomalies because this value represented the threshold where a metallic item could be positively distinguished from signal noise. The geophysical investigation report, including GPO results, is presented in **Appendix D**.

An extensive QC program was applied to the DGM operations at the site. **Figure 3-3** shows an overall chart of the QC steps. A summary of the QC tests performed is presented in **Table 3-1**. Both NAEVA and CH2M HILL performed QC of geophysical data and data deliverables at each step of the process.

Four QC seeds were placed within the Phase I investigation area before the 2008 geophysical survey. The seed items were MK2 hand grenade simulates, such as those planted in the GPO plot. All QC seeds were identified during the Phase I DGM as anomalies representing potential MEC.

TABLE 3-1

DGM Instruments Standardization Tests and Acceptance Criteria

Site UXO-17 Former Firing Position #2

MCB CamLej, North Carolina

Test	Test Description	Acceptance Criteria	Power On	Beginning of Day	Beginning and End of Day	First Time Instr. Used	2% of Total Area Surveyed
1	Equipment Warm-up	Equipment specific (typically 5 minutes)	X				
2	Personnel Test	Based on instrument used. Personnel, clothing, etc. should have no effect on instrument response. <2 mV		X			
3	Vibration Test (Cable Shake)	Data profile does not exhibit data spikes. <2 mV		X			
4	Static Background & Static Spike	+/- 20% of standard item response, after background correction			X		
5	Repeat Data	Repeatability of response amplitude					X

3.1.4 Intrusive Investigation Activities

The intrusive investigation activities within the Phase I investigation area were performed by Ordnance and Explosives Remediation, Inc. (OER), of Cohasset, Massachusetts, from December 2010 and April 2011 through June 2011. Intrusive operations were conducted in accordance with the Explosives Safety Submission (ESS), ESS-115 (CH2M HILL, 2008b) and Amendment 1 to the ESS, ESS-116 (CH2M HILL, 2009), which permitted the use of armored mechanized equipment for excavation.

The geophysical anomalies and areas identified for investigation were reacquired with a RTK GPS and an EM61-MK2. Each identified anomaly was excavated using hand tools. Each excavated item was classified as MEC, material potentially presenting an explosive hazard (MPPEH), or other metallic debris. MPPEH and other debris were segregated and placed at the MPPEH collection point and scrap metal collection point, respectively. Excavation areas were then rechecked with the EM61-MK2 to ensure that additional metallic debris was not present beneath the removed item. Construction debris and concertina wire was removed and the areas previously inaccessible to DGM equipment were investigated using analog magnetometers. Analog magnetometers consisted of White's all-metals detectors.

Anomaly investigation activities and material inspections were conducted in accordance with Ordnance Pamphlet 5, Volume 1 (NAVSEA, 2010). MPPEH underwent two independent 100% visual inspections by two UXO Technician IIIs, who were not under the same command structure and who were authorized to sign the DD Form 1348-1A. After the two independent inspections indicated that there was no explosive hazard associated with the MPPEH, the material was classified as material documented as safe (MDAS). The DD Form 1348-1A was used to document the certification/verification (**Appendix E**).

3.1.5 Environmental Investigation Activities

All Phase I investigation samples, except for the post-detonation soil samples, were analyzed by CompuChem Labs, Inc. of Cary, North Carolina, with the resulting analytical data validated by DataQual Environmental Services, LLC of St. Louis, Missouri. Post-detonation soil samples were analyzed by Empirical Laboratories of Nashville, Tennessee.

Surface and Subsurface Soil Sampling

Surface and subsurface soil sampling in the Phase I investigation area was performed in October 2008. Surface and subsurface soil sampling locations in the Phase I investigation area are shown on **Figure 3-2**. Three incremental sampling (IS) surface soil samples were collected from each of three DUs for a total of nine surface soil samples (designated as ASR2.212-FP2-DU01-SS[01,02,03] through ASR2.212-FP2-DU03-SS[01,02,03]). The surface soil samples were collected from 0 to 2 inches bgs using the IS procedure, as described in the standard operating procedure (SOP) *Systematic Random Incremental Sampling* in Appendix C of the MRP MPP (CH2M HILL, 2008c).

Four soil borings were advanced to depths of up to 16 feet, using a direct push technology (DPT) drill rig operated by Parratt-Wolff, Inc. of Hillsborough, North Carolina. Each borehole was hand-augered to a depth of 5 feet bgs, with the UXO Technician checking the borehole with a downhole magnetometer at 1-foot increments. The DPT sampling method included the use of

an open core barrel sampling device along with disposable acetate liners. Down-hole sampling equipment was decontaminated between borings and new liners were used to retrieve each successive soil core. The continuous soil cores retrieved from these borings were examined, logged according to the unified soil classification system by the CH2M HILL geologist, and field-screened for the presence of volatile organic compounds (VOCs) using a photoionization detector. Soil boring logs are provided in **Appendix B**.

Four subsurface soil samples, ASR2.212-FR2-IS01 through ASR2.212-FR2-IS04, and one duplicate were collected from the 2-foot interval immediately above the water table at depths ranging from 3 to 9 feet bgs. Surface and subsurface soils were homogenized in accordance with the *Homogenization of Soil and Sediment* SOP in Appendix C of the MRP MPP (CH2M HILL, 2008c).

Surface and subsurface soil samples were analyzed for the following constituents:

- Explosives residues, including PETN and nitroglycerine (SW-846 EPA Method 8330)
- Perchlorate (EPA Method 6850)
- RCRA metals (SW-846 EPA Method 6010B/7000): arsenic, barium, cadmium, chromium, lead, mercury, silver, and selenium.

Temporary Well Installation and Groundwater Sampling

Four temporary groundwater monitoring wells (ASR2.212-FP2-TW01 through ASR2.212-FP2-TW04) were installed within the Phase I investigation area at the locations shown on **Figure 3-2**. The wells were installed to depths ranging from 14 to 16 feet bgs using DPT. Well installation details are provided in **Table 2-2**. The four temporary monitoring wells were installed by Parratt-Wolff, Inc., a North Carolina-licensed driller.

Each temporary well was constructed with 1-inch inside diameter Schedule 40 polyvinyl screen (PVC) screen and riser. The well screens consisted of a 10-foot length of 0.010-inch machine slotted Schedule 40 PVC and were placed to bracket the water table. Each well was also equipped with a pre-packed sand filter (120 mesh) attached to the screened interval, to reduce turbidity. Additional silica filter sand was placed in the remaining annular space between the pre-packed sand filter and the borehole wall, extending roughly 1 foot above the top of the screen. A layer of bentonite granules was placed above the top of the sand pack, extending to the ground surface. A locking watertight cap was placed on the PVC riser of each well. Well completion diagrams are provided in **Appendix B**.

The monitoring wells were developed using a submersible pump and a surge block after placement of the filter pack and bentonite. Development continued until the water was visually clear and water quality parameters had stabilized. Following well development, the wells were allowed to equilibrate for at least 24 hours before sampling.

Groundwater samples were collected on October 9, 2008, using a peristaltic pump with disposable polyethylene tubing and low-flow purging and sampling techniques. Water quality parameters (specific conductance, pH, turbidity, temperature, dissolved oxygen [DO], and oxidation-reduction potential [ORP]) were monitored during the purging phase using a Horiba U-22 water quality meter. Field parameter measurements are summarized in **Table 3-2**.

Groundwater sampling data sheets are provided in **Appendix F**. Groundwater samples were collected only after all field parameters had become stable over three successive readings and at least one well volume had been purged, or at least three well volumes had been purged from the well. Parameters were considered stabilized over three successive readings when successive measurements agreed as follows:

- pH within 0.1 pH units
- Temperature measurements were constant
- Conductivity within 3%
- ORP within 10 mV
- DO within 10%
- Turbidity within 10% or as low as practicable given sampling conditions

Before sample collection began, the water quality meter flow-through cell was disconnected from the peristaltic pump so that the pump discharge flowed directly into the laboratory-supplied sample bottles.

TABLE 3-2
Phase I Investigation Groundwater Field Parameters
UXO-17 Firing Position 2
MCB Camp Lejeune, North Carolina

Station ID	ASR2.212-FP-TW01	ASR2.212-FP-TW02	ASR2.212-FP-TW03	ASR2.212-FP-TW04
Sample Date	10/9/2008	10/9/2008	10/9/2008	10/9/2008
Field Parameters				
Dissolved Oxygen (mg/L)	0.0	0.0	0.0	1.19
Oxidation Reduction Potential (mV)	-76	-274	-155	29
pH	4.64	5.36	6.33	4.67
Specific Conductance (mS/cm)	0.040	0.242	0.567	0.076
Temperature (°C)	24.7	22.5	21.19	20.63
Turbidity (NTU)	21.4	4.34	5.41	0.64
mg/L = milligrams per liter				
mS/cm = milliSiemens per centimeter				
°C = degrees Celsius				
NTU = nephelometric turbidity units				

Water level elevation, measuring point elevation, depth to water, sampling depth, and total well depth measurements were recorded in the field log book and/or on groundwater sampling data sheets.

Groundwater samples were analyzed for the following constituents:

- Explosives residues (SW-846 EPA Method 8330/8332)

- Perchlorate (EPA Method 6850)
- RCRA Total metals (SW-846 EPA Method 6010B/7000): arsenic, barium, cadmium, chromium, lead, mercury, silver, and selenium.

Following sampling and surveying, all temporary wells were removed and DPT boreholes were abandoned in accordance with North Carolina well construction standards, 15A North Carolina Administrative Code (NCAC) 2C (NCDENR, 2010a) by grouting the borehole from the bottom of the boring to ground surface.

Post-Detonation Sampling

Surface soil samples were collected from the location where blow-in-place operations were conducted for the MEC item found during the intrusive investigation in the Phase I investigation area. One composite surface soil sample (designated MR17-SS20) and its duplicate (designated MR17-SS20D) were collected using the TR-02-1 sampling approach in the resulting crater, and the IS method was used to collect a sample from outside of the crater (designated MR17-SS21).

The post-detonation samples were submitted to Empirical Laboratories and analyzed for the following constituents:

- Explosives residues, including PETN and nitroglycerin (SW-846 EPA Method 8330)
- Perchlorate (SW-846 EPA Method 6850)
- RCRA metals (SW-846 EPA Method 6010B series and 7471A) : aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc

Waste Sampling

During the intrusive investigation, six 55-gallon metal drums were discovered in the Phase I investigation area as shown on **Figure 3-4**. Two of the drums (Drum #1 and #2) contained unidentified materials; all others were crushed or empty. Drum #1 was discovered in January 2011 and contained soil. It was overpacked by Clean Harbors of Reidsville, North Carolina, and one sample (designated MR17-IDW-011811) was collected from it on January 18, 2011. The sample was shipped to Empirical Laboratories and analyzed for the following analytes for waste characterization:

- Toxicity Characteristic Leaching Procedure (TCLP) VOCs
- TCLP SVOCS
- TCLP pesticides
- TCLP metals
- RCRA characteristics: ignitability, reactivity, and corrosivity

Drum #2 was found in March 2011 and contained a mix of liquid and solids. The drum was found among construction debris, and it was not determined until movement that the item was a drum. Upon disturbance of the drum by an excavator, liquid leaked onto the ground surface.

Photoionization detector readings of the drum contents were greater than 300 parts per million. The contents emitted a turpentine-like odor and a sheen was observed on the surface of the liquid. The liquid-filled drum was overpacked and sampled by Clean Harbors on April 25, 2011. One characterization sample (designated F81835R) was collected from the contents. It was shipped to Accutest Laboratories and analyzed for the following analytes for waste characterization:

- TCLP VOCs
- TCLP SVOCS
- TCLP pesticides
- TCLP metals
- Ignitability, reactivity, and corrosivity

Because most of the liquid had evaporated in the 29 days that elapsed before collection, the sample was analyzed as a soil sample.

Two additional soil samples (designated MR17-SS22-11B and MR17-SS22D-11B) from Drum #2 were submitted to Empirical Laboratories and analyzed for the following analytes:

- VOCs (SW-846 EPA Method 8260B)
- SVOCS (SW-846 EPA Method 8270D)
- Herbicides (SW-846 EPA Method 8151A)
- Pesticides Target Compound List (SW-846 EPA Method 8181B)
- RCRA metals (SW-846 EPA Method 6010B/7471B)

Soil was also excavated where the liquid contents had leaked onto the ground (a 6- by 5-foot area, excavated to 2 feet bgs), along the spill path (a 2.5- by 25-foot area, excavated to 1 foot bgs), and where the drum was placed (a 5- by 5-foot area, excavated to 2 feet bgs). Four soil samples (designated MR17-IDW01-060211 through MR17-IDW04-060211) were collected from the excavated soil. The samples were placed in iced coolers and prepared for shipment under chain-of-custody control. The samples were submitted to Empirical Laboratories and analyzed for the following analytes :

- TCLP VOCs
- TCLP SVOCS
- TCLP pesticides
- TCLP metals
- Ignitability, reactivity, and corrosivity

Quality Assurance/Quality Control Sampling

Quality assurance/quality control (QA/QC) sampling was performed in accordance with CLEAN and CH2M HILL protocols, including the collection of field blanks, equipment blanks, duplicates, and matrix spike/matrix spike duplicates (MS/MSDs).

3.1.6 Investigative-derived Waste Management

Investigation-derived waste (IDW) was disposed in accordance with the Base Waste Management Plan (CH2M HILL, 2008d). IDW generated during the Phase I investigation area

activities included soil, groundwater, and decontamination fluids. Soil cores, purge water, and decontamination fluids were placed in labeled 55-gallon drums and staged at the 90-day storage facility on Parachute Tower Road. Disposable equipment, including personal protective equipment (PPE), DPT soil sleeves, sample tubing, plastic sheeting, paper towels, and aluminum foil, was disposed as solid waste in an on-Base trash receptacle. Drum #1 and excavated soil was staged at the 90-day storage facility on Parachute Tower Road and disposed as non-hazardous waste. Overpacked Drum #2 was staged at the 90-day storage facility on Parachute Tower Road and disposed as hazardous waste.

3.2 Phase II Investigation Activities

The area of investigation addressed during Phase II consisted of the remaining 12 acres of Site UXO-17, as shown on **Figure 2-1**. The Phase II investigation activities were conducted in November and December 2010 and consisted of site preparation; a geophysical survey in transects covering approximately 9% of the area; environmental sampling of surface soil, subsurface soil, and groundwater; followed by intrusive investigation of selected geophysical anomalies in April and August 2011.

3.2.1 Land Surveying

Land surveying within the Phase II investigation area was performed by land Design Surveying Incorporated of Charlotte, North Carolina. The initial survey in the Phase II investigation area consisted of DGM transect marking and DU layout. The surveyor also recorded the locations of two geophysical QC seeds buried along DGM transects.

Following completion of the Phase II environmental sampling activities, the coordinates and elevations of the permanent monitoring wells locations were surveyed, using the same procedures used in the Phase I investigation area.

3.2.2 Vegetation Clearance

Wetlands and Woodlands Management of Wilmington, North Carolina, was subcontracted to clear vegetation along the DGM transects and groundwater monitoring well installation locations in the Phase II investigation area. Vegetation smaller than 6 inches in diameter was cut to within 6 inches of the ground surface using a mechanized mulching-cutting machine. Cut vegetation was mulched and left in place.

3.2.3 Digital Geophysical Mapping

DGM was performed within the Phase II investigation area in November 2010 by NAEVA Geophysics. QC was performed by both NAEVA and CH2M HILL's MR Geophysicist. DGM was conducted along transects (with centerlines spaced approximately every 32 feet part) covering a planned 10% of the 12-acre area. An area of approximately 1.9 acres was not accessible because of the presence of construction debris piles, debris pits, and ponded surface water. Another area of approximately 1 acre was not accessible because it was part of the active landfill. The Phase II geophysical survey transects are shown on **Figure 3-1**.

DGM activities were performed in accordance with the UFP-SAP (CH2M HILL, 2010b) using a single-coil EM61-MK2 operated in wheel mode configuration, with data positioning provided by an RTK GPS. Geophysical system verification (GSV) was performed as part of the process for validating the DGM systems to be used during the DGM activities for the Phase II investigation. The GSV established that a threshold response of 3.0 mV for geophysical anomaly selection was appropriate for the DGM survey. The geophysical investigation report for the DGM survey is provided in **Appendix D**.

As in the Phase I investigation, an extensive QC program was applied to the Phase II DGM activities, as presented on **Figure 3-2** and in **Table 3-1**. Both NAEVA and CH2M HILL performed QC of geophysical data and data deliverables at each step of the process.

The DGM threshold response for the 12-acre portion of Site UXO-17 was adjusted from 2.5 mV, as defined by the UFP-SAP DGM project quality objective, to 3.0 mV based on the GSV. All other measurement quality objectives outlined in the UFP-SAP were met during the Phase II DGM activities.

Two QC seed items were placed within the Phase II investigation area before DGM began. The seed items consisted of 1-inch by 4-inch steel pipes that were industry standard objects with known responses to detection by the EM61-MK2 (see *EM61-MK2 Response of Three Munitions Surrogates*, [U.S. Navy, 2009]). Both QC seed items were identified during the geophysical survey as anomalies representing potential MEC at the site.

3.2.4 Intrusive Investigation Activities

A total of 662 geophysical anomalies were identified as representing potential subsurface MEC within the Phase II investigation area. The intrusive investigation activities within the Phase II investigation area were performed by OER in April and August 2011. Intrusive operations were conducted in accordance with Amendment 2 to the ESS, ESS-117 (CH2M HILL, 2010c).

The geophysical anomalies identified for investigation were reacquired with an RTK GPS and EM61-MK2 and excavated, with each excavated item classified using the same techniques as in the Phase I intrusive investigation. Excavation areas were rechecked with the EM61-MK2 to ensure that additional metallic debris was not present beneath each removed item. DD Form 1348-1As used to document the inspections of MDAS are provided in **Appendix E**.

3.2.5 Environmental Sampling Activities

Environmental samples within the Phase II investigation area were collected in accordance with the UFP-SAP (CH2M HILL, 2010b) at the locations shown on **Figure 3-5**. All samples collected from within the Phase II investigation area were analyzed by Empirical Laboratories. Total chromium and hexavalent chromium analytical data were validated by Environmental Data Services, Inc., of Williamstown, Virginia. The remaining analytical data were validated by Environmental Data Quality Inc. of Exton, Pennsylvania.

Surface and Subsurface Soil Sampling

Surface and subsurface soil sampling in the Phase II investigation area was conducted in November and December 2010. Three incremental surface soil samples were collected from

each of three DUs for a total of nine samples (designated as MR17-DU01-SS[01,02,03] through MR17-DU03-SS [01,02,03]). The surface soil samples were collected from 0 to 2 inches bgs using the IS procedure, as described in the *Systematic Random Incremental Sampling* SOP in Appendix C of the MRP MPP (CH2M HILL, 2008c).

In addition, 19 surface soil samples were collected using the TR-02-1 sampling method (U.S. Army Corps of Engineers, 2002). These soil samples were collected by compositing a minimum of 30 sample increments from depths of 0 to 2 inches) from random locations within each 1- by 1-meter sampling location. The coordinates of the sampling locations were recorded using GPS and were based on the center of the sampling area.

Fifteen soil borings were advanced to depths of 13 to 17 feet bgs, using a DPT drill rig operated by American Environmental Drilling of Greenville, South Carolina. Each borehole was hand-augered to a depth of 5 feet bgs, with a UXO Technician checking the borehole with a downhole magnetometer at 1-foot increments. Downhole sampling equipment was decontaminated between borings, and new liners were used to retrieve each successive soil core. Subsurface soil samples designated MR17-IS01 through MR17-IS15 were collected from approximately 2 feet above the water table. The water table was encountered at approximately 3 to 9 feet bgs throughout the Phase II investigation area. The continuous soil cores retrieved from these borings were examined and logged using the Unified Soil Classification System by the CH2M HILL geologist and field screened for the presence of VOCs using a photoionization detector. Soil boring logs are provided in **Appendix B**.

Surface and subsurface soils were homogenized in accordance with the *Homogenization of Soil and Sediment* SOP in Appendix C of the MRP MPP (CH2M HILL, 2008c) before they were transferred into sample containers, placed in iced coolers, and prepared for shipment under chain-of-custody control.

Surface and subsurface soil samples were analyzed for the following constituents:

- Explosives residues, including PETN and nitroglycerin (SW-846 EPA Method 8330)
- Perchlorate (SW-846 EPA Method 6850)
- RCRA metals (SW-846 EPA Method 6010B series and 7470A) : aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc

Sediment and Surface Water Sampling

On December 3, 2010, co-located sediment and surface water samples (designated as MR17-SD01 and MR17-SW01) were collected as part of the Phase II investigation, at the location shown in **Figure 3-5**. The sediment and surface water samples were collected from ponded surface water that covered an area of approximately 20 by 20 feet and was 1 foot deep. No discernable flow direction was observed. A handheld GPS unit was used to record the location of the samples. The surface water sample was collected before the sediment sample. The sediment sample was collected by advancing a trowel approximately 6 to 12 inches into the

sediment, draining of excess water, and placing the sample into the appropriate sample containers.

The sediment and surface water samples were placed in iced coolers and prepared for shipment under chain-of-custody control.

The sediment sample was analyzed for the following constituents:

- Explosives residues, including PETN and nitroglycerin (SW-846 EPA Method 8330/8332)
- Perchlorate (SW-846 EPA Method 6850)
- RCRA metals (SW-846 EPA Method 6010B series): aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc

The surface water sample was analyzed for the following constituents:

- Explosives residues, including PETN and nitroglycerin (SW-846 EPA Method 8330/8332)
- Perchlorate (SW-846 EPA Method 6850)
- RCRA metals (SW-846 EPA Method 6010B series) total and dissolved: aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc

Permanent Monitoring Well Installation and Groundwater Sampling

Seven permanent groundwater monitoring wells (designated MR17-TW09 through MR17-TW15) were installed in the Phase II investigation area in December 2010, at the locations shown on **Figure 3-5**. The wells were installed from 13 to 17 feet bgs using DPT. Well installation details are presented in **Table 2-2**. The wells were installed by American Environmental Drilling, a North Carolina-licensed driller.

Each monitoring well consisted of a 2-inch diameter 0.010-inch machine slotted Schedule 40 PVC screen with a bottom cap that was placed to bracket the water table (so that the static groundwater table intersects 1 to 2 feet below the top of the screen of each monitoring well). Each well was equipped with a pre-packed sand filter (120 mesh) attached to the screened interval, to reduce turbidity. Additional silica filter sand was placed in the remaining annular space between the pre-packed sand filter and the borehole wall, extending roughly 2 feet above the top of the screen for most wells. For monitoring well MR17-TW15, additional silica filter sand was not placed above the screen due to its shallow (13-foot) depth to ensure an adequate bentonite seal was installed. A layer of bentonite granules was placed above the top of the sand pack in each well extending to the ground surface and left to hydrate for 24 hours before development. Each well was completed with an above-grade locking steel protective casing set in a 2- by 2-foot concrete pad. Although they were installed as permanent wells, the Phase II wells were labeled using the temporary well naming convention (the "TW" designation) as originally specified in the Work Plan. Well construction details are provided in **Appendix B**.

The permanent wells were developed using a submersible pump and a surge block after placement of the filter pack and bentonite. Development continued until the water was visually clear and water quality parameters had stabilized, following the same procedures used for Phase I groundwater sampling. All groundwater samples were collected using a peristaltic pump with disposable polyethylene tubing and low-flow purging and sampling. Water quality parameters (specific conductance, pH, turbidity, temperature, DO, and ORP) were measured during the purging phase using a YSI 556 multi-probe water quality meter and Hanna 98703 turbidimeter. Field parameters are summarized in **Table 3-3**. Groundwater sampling data sheets are provided in **Appendix F**.

Groundwater samples were analyzed for the following constituents:

- Explosives residues, including PETN and nitroglycerine (SW-846 EPA Method 8330/8332)
- Perchlorate (EPA Method 6850)
- Target Analyte List total metals (SW-846 EPA Method 6010B)
- Dissolved metals (SW-846 EPA Method 6010B) at MR17-MW10, MW11 and MW12 only
- Total chromium (SW-846 EPA Method 6010B) at MR17-MW10, MW11 and MW12 only
- Hexavalent chromium (SW-846 EPA Method 7196A) at only at MR17-MW10, MW11 and MW12 only

Quality Assurance/Quality Control Sampling

QA/QC sampling was performed in accordance with CLEAN and CH2M HILL protocols for soil, and groundwater samples, including the collection of field blanks, equipment blanks, duplicates, and MS/MSDs. No duplicate or MS/MSDs were collected for the co-located surface water and sediment samples.

3.2.6 Investigation-derived Waste Management

IDW was disposed in accordance with the Base Waste Management Plan (CH2M HILL, 2008d). IDW generated during field events consisted of soil cuttings from DPT soil borings and installation of groundwater monitoring wells, well development water, purge water, decontamination fluids, disposable equipment, and PPE. The soil cuttings, purge water, and decontamination fluids were placed in labeled 55-gallon drums and staged at the 90-day storage facility on Parachute Tower Road. Disposable equipment, including PPE, poly sheeting, paper towels, and aluminum foil, was placed in trash bags and disposed of in an on-Base trash receptacle.

TABLE 3-3
Phase II Investigation Groundwater Field Parameters
UXO-17 Firing Position 2
MCB Camp Lejeune, North Carolina

Station ID	MR17-TW09	MR17-TW10	MR17-TW11	MR17-TW12	MR17-TW13	MR17-TW14	MR17-TW15
Sample Date	12/05/10	12/06/10	12/06/10	12/06/10	12/06/10	12/06/10	12/05/10
Field Parameters							
Dissolved Oxygen (mg/L)	14.16*	5.81	8.29	3.81	6.88	6.09	6.92
Oxidation Reduction Potential (mV)	254.1	218.7	244.6	214.3	274.2	219.2	97.1
pH	4.74	4.78	4.59	5.77	4.25	4.63	5.31
Specific Conductance (mS/cm)	0.033	0.118	0.053	0.239	0.155	0.089	0.171
Temperature (°C)	15.27	12.13	14.71	18.49	15.67	16.83	15.77
Turbidity (NTU)	9.70	11	11	12	19	19	8.01

*Dissolved oxygen concentration greater than the approximate solubility of oxygen in water at sea level and the recorded temperature. Therefore, the measurement is considered to be invalid.

3.3 Phase III Investigation Activities

Phase III consisted of well installation and groundwater sampling of select permanent groundwater monitoring wells within Site UXO-17, in the vicinity of the discovery location of Drum #2. The Phase III investigation activities were conducted in July 2011. The Phase III investigation area overlapped with the Phase I and Phase II investigation areas.

3.3.1 Vegetation Clearance

Mid Atlantic Drilling, Incorporated of Carolina Beach, North Carolina, was subcontracted to clear vegetation in the vicinity of the proposed well locations. Vegetation smaller than 6 inches in diameter was cut to within 6 inches of the ground surface using a mechanized mulching-cutting machine. Cut vegetation was mulched and left in place.

3.3.2 Environmental Sampling Activities

Permanent Monitoring Well Installation and Groundwater Sampling

Three permanent groundwater monitoring wells (MR17-TW16, MR17-TW17, and MR17-TW18) were installed at the locations shown on **Figure 3-5**. The wells were installed to depths ranging from 16 to 17 feet bgs using DPT. Well installation details are presented in **Table 2-2**. Well construction activities were performed by Probe Technology Incorporated of Concord, North Carolina, a North Carolina-licensed driller. Temporary monitoring wells were constructed from 2-inch inner diameter, Schedule 40 PVC risers with 0.010-inch screen size using hollow stem auger. The 10-foot well screens were placed to bracket the water table. Silica filter sand extended roughly 1 foot above the top of the screen. A layer of bentonite granules was placed above the top of the sand pack, extending to the ground surface. A locking watertight cap was placed on the PVC riser of each well. Soil boring logs and well construction details are provided in **Appendix B**.

Groundwater samples from the monitoring wells were collected between July 27 and 29, 2011. In addition to the newly installed wells, groundwater samples were also collected from existing wells upgradient (wells MR17-TW09 and MR17-TW11) and downgradient (wells MR17-TW13, MR17-TW14, and MR17-TW15) of the discovery location of Drum #2.

Groundwater samples were collected using a peristaltic pump with disposable polyethylene tubing and low-flow purging and sampling techniques. Water quality parameters (specific conductance, pH, turbidity, temperature, DO, and ORP) were monitored during the purging phase using a YSI 556 multi-probe water quality meter and Hanna 98703 turbidimeter. Field parameter measurements are summarized in **Table 3-4**. Groundwater sampling data sheets are provided in **Appendix F**.

Groundwater samples were analyzed for the following constituents:

- VOCs (by EPA Method SW-846 8260)
- SVOCs (by EPA Method SW-846 8270)

Quality Assurance/Quality Control Sampling

QA/QC sampling was performed in accordance with CLEAN and CH2M HILL protocols, including the collection of field blanks, equipment blanks, duplicates, and MS/MSDs.

3.3.3 Land Surveying

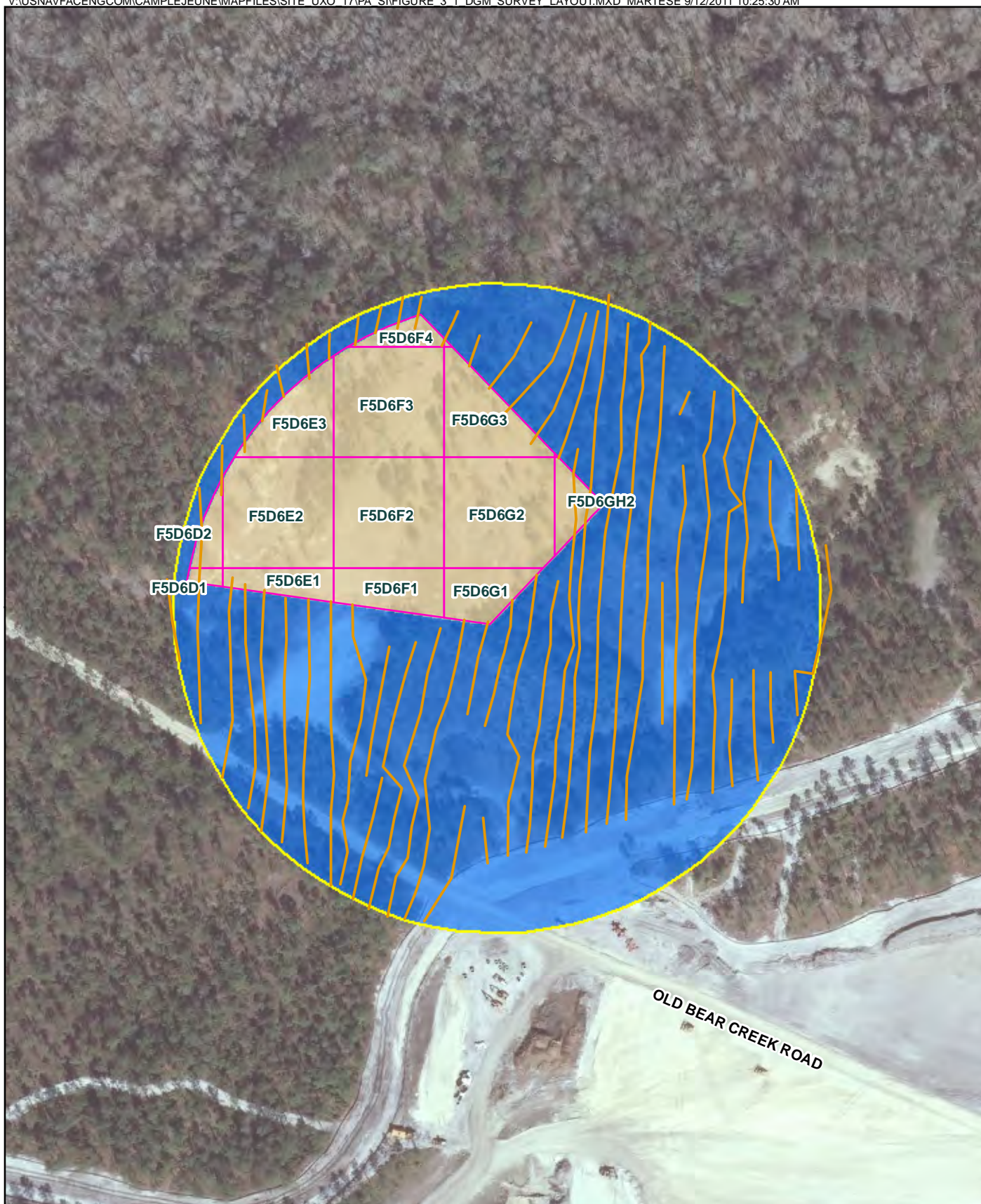
Land surveying for the Phase III investigation was performed by Land Design Surveying, Incorporated of Charlotte, North Carolina. Following the groundwater sampling activities, a control survey was conducted to ensure positional accuracy and the coordinates and elevations of the three permanent monitoring wells were surveyed, using the same procedures and accuracy as in the preceding surveys.

3.3.4 Investigation-derived Waste Management

IDW generated during the Phase III investigation consisted of soil cuttings from DPT soil borings and installation of groundwater monitoring wells, well development water, purge water, decontamination fluids, disposable equipment, and PPE. IDW was disposed in accordance with the Base Waste Management Plan (CH2M HILL, 2008d). Soil cuttings and purge water and decontamination fluids were placed in labeled 55-gallon drums and staged at the 90-day storage facility on Parachute Tower Road. Disposable equipment, including PPE, poly sheeting, paper towels, and aluminum foil, was placed in trash bags and disposed of in an on-Base trash receptacle.

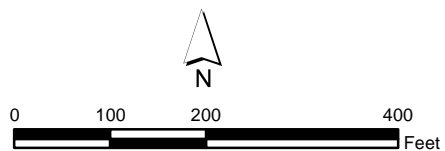
TABLE 3-4
Phase III Investigation- Groundwater Field Parameters
UXO-17 Firing Position 2
MCB Camp Lejeune, North Carolina

Station ID	MR17-TW09	MR17-TW11	MR17-TW13	MR17-TW14	MR17-TW15	MR17-TW16	MR17-TW17	MR17-TW18
Sample Date	7/28/2011	7/28/2011	7/29/2011	7/29/2011	7/29/2011	7/29/2011	7/26/2011	7/26/2011
Field Parameters								
Dissolved Oxygen (mg/L)	4.50	1.41	3.50	7.82	2.06	2.20	0.20	9.90
Oxidation Reduction Potential (mV)	-178.4	183.2	210.8	221.0	58.4	33.2	26.1	147
pH	7.66	3.36	3.61	4.12	4.92	6.04	6.64	5.97
Specific Conductance (mS/cm)	0.134	0.113	0.044	0.127	0.183	0.439	0.578	0.543
Temperature (°C)	20.2	22.45	20.14	23.29	21.22	20.91	22.2	21.5
Turbidity (NTU)	21.1	48.9	15.9	25.2	75.3	22.3	14.7	9.03



Legend

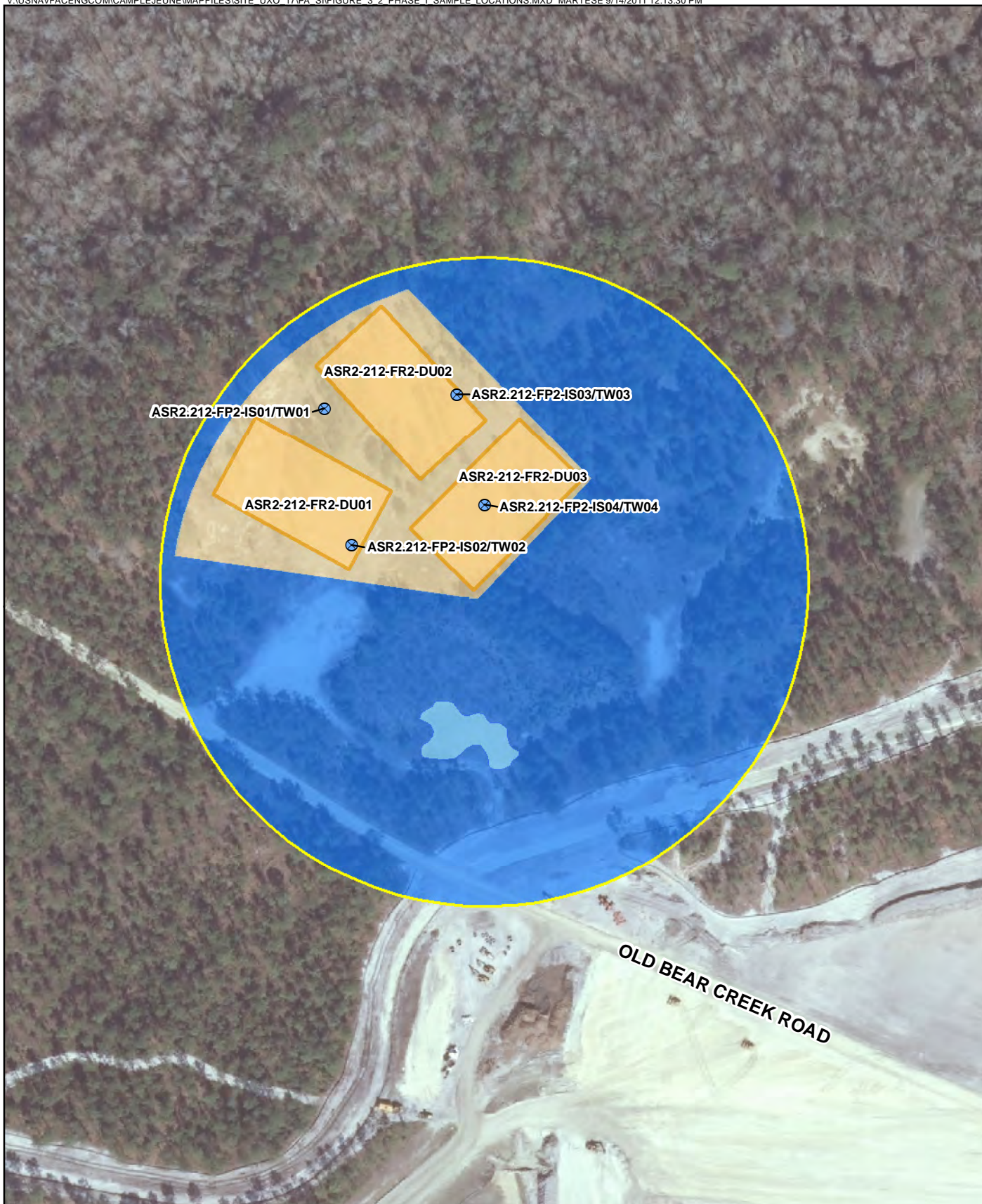
- DGM Transects
- Geophysical Grid
- Phase I Investigation, 100% DGM Survey
- Phase II Investigation, DGM Transect Survey
- Site UXO-17 Boundary



1 inch = 200 feet

Figure 3-1
DGM Survey Layout
Site UXO-17, Former Firing Position 2
PA/SI Report
MCB CamLej
North Carolina





Legend

- Subsurface Sample Location/
Temporary Well Locations
- Pond
- Phase I Investigation Area (4 acres)
- Phase II Investigation Area (12 acres)
- Decision Units
- Site UXO-17 Boundary

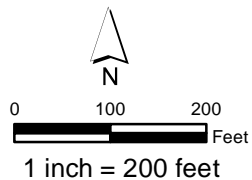


Figure 3-2
Phase I Sampling Locations
Site UXO-17, Former Firing Position 2
PA/SI Report
MCB CamLej
North Carolina



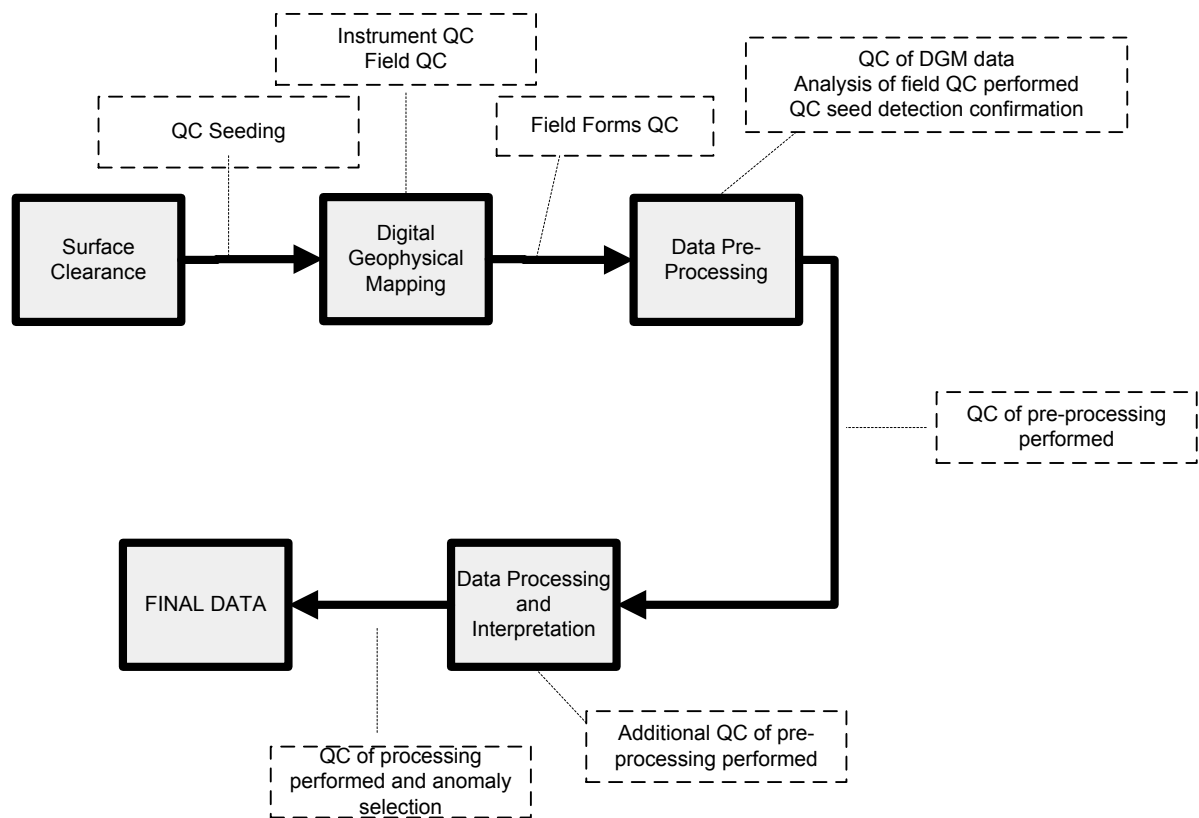
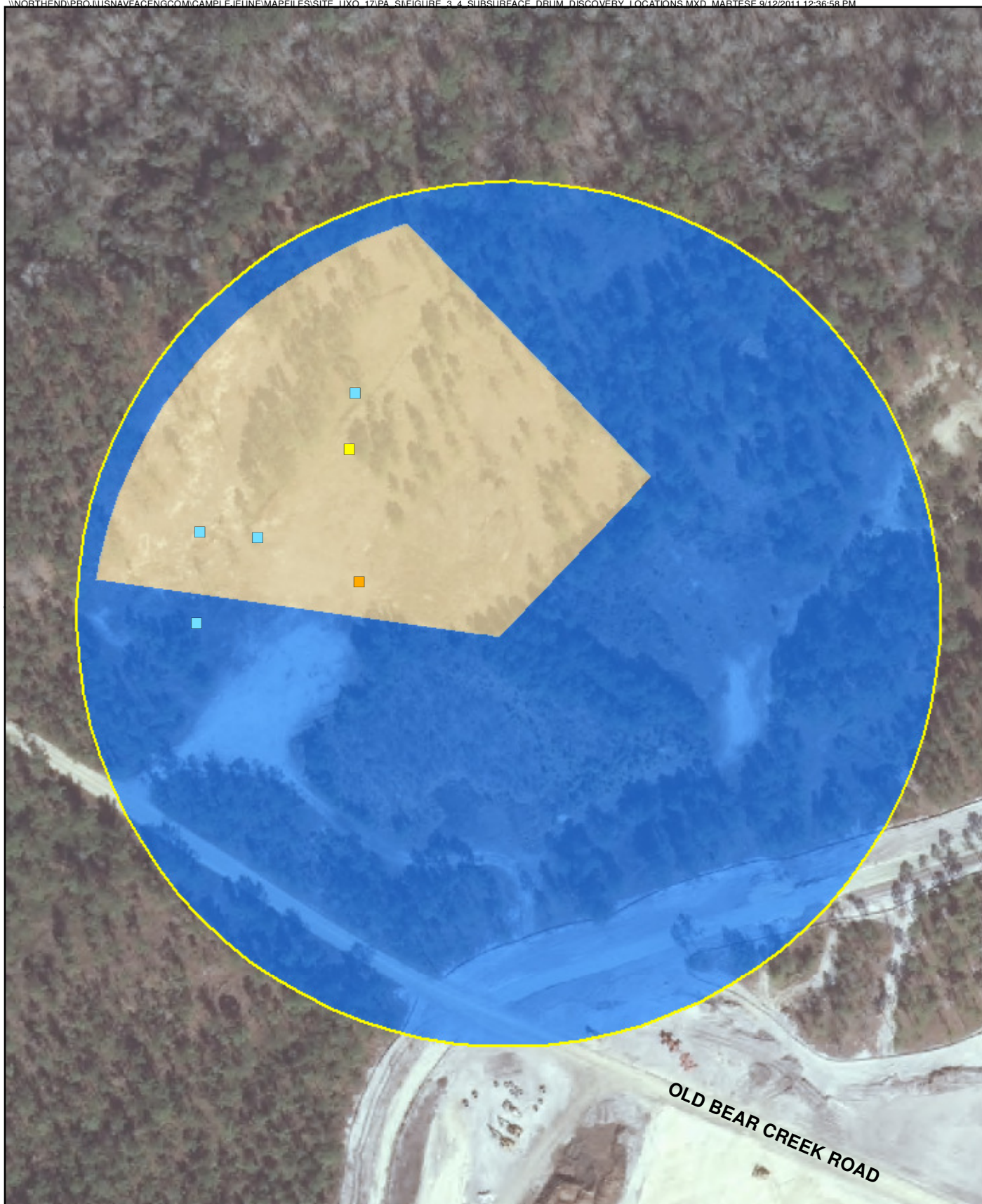
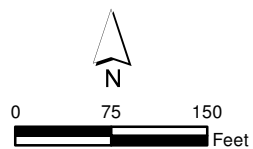


FIGURE 3-3
 Overview of DGM Process QC
 Site UXO-17, Former Firing Position 2
 PA/SI Report
 MCB CamLej
 North Carolina



Legend

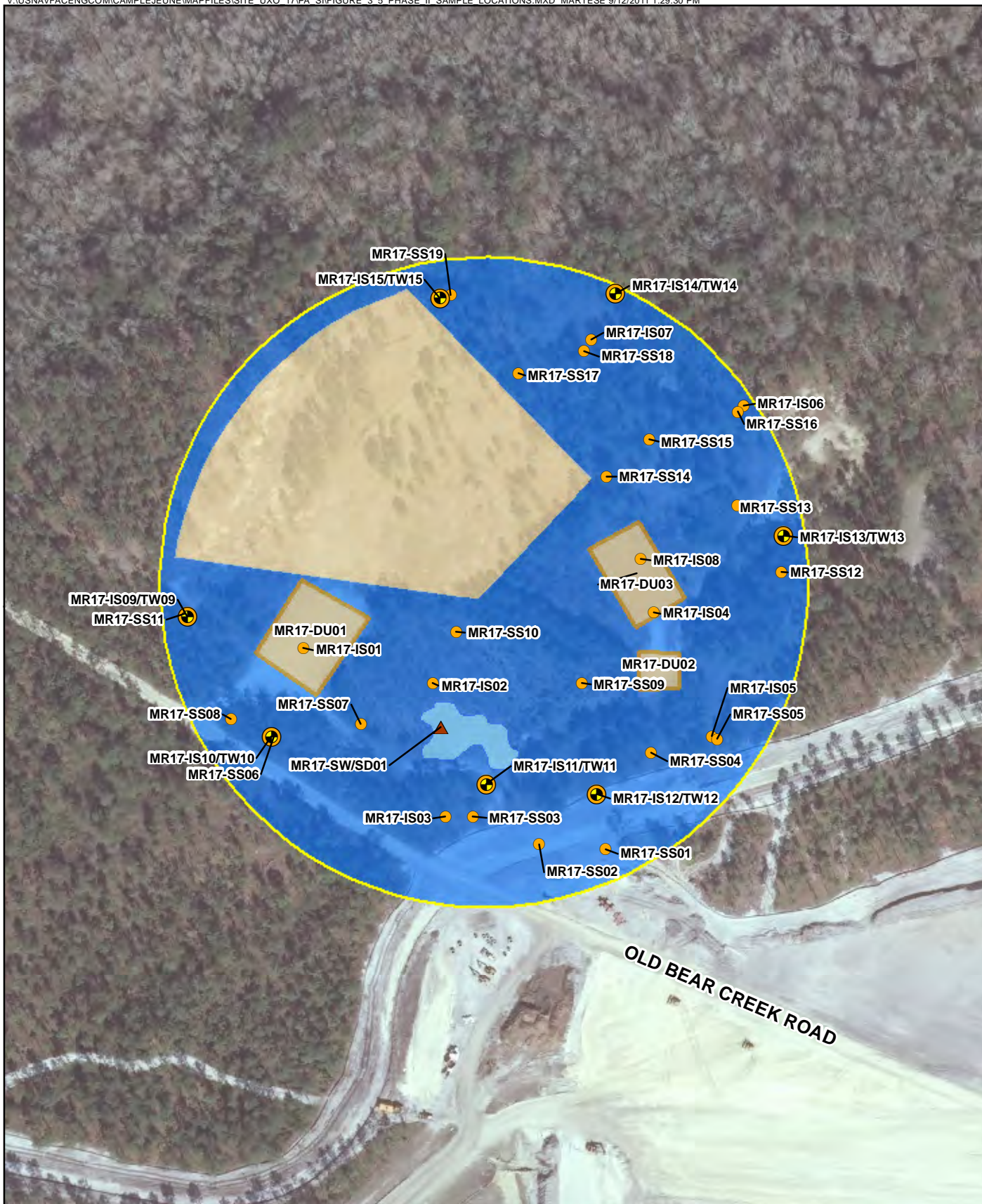
- Empty Drum
- Liquid Filled Drum (Drum #2)
- Solid Filled Drum (Drum #1)
- Phase I Investigation Area (4 acres)
- Phase II Investigation Area (12 acres)
- Site UXO-17 Boundary



1 inch = 150 feet

Figure 3-4
Subsurface Drum Discovery Locations
Site UXO-17, Former Firing Position 2
PA/SI report
MCB CamLej
North Carolina





Legend

- Surface/Subsurface Sample Location
- ▲ Surface Water/Sediment Sample Location
- ⊙ Surface/Subsurface/Permanent Well Location
- Phase I Investigation Area (4 acres)
- Phase II Investigation Area (12 acres)
- Site UXO-17 Boundary
- Decision Units
- Pond

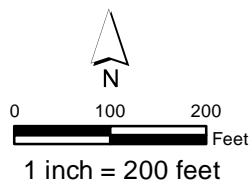
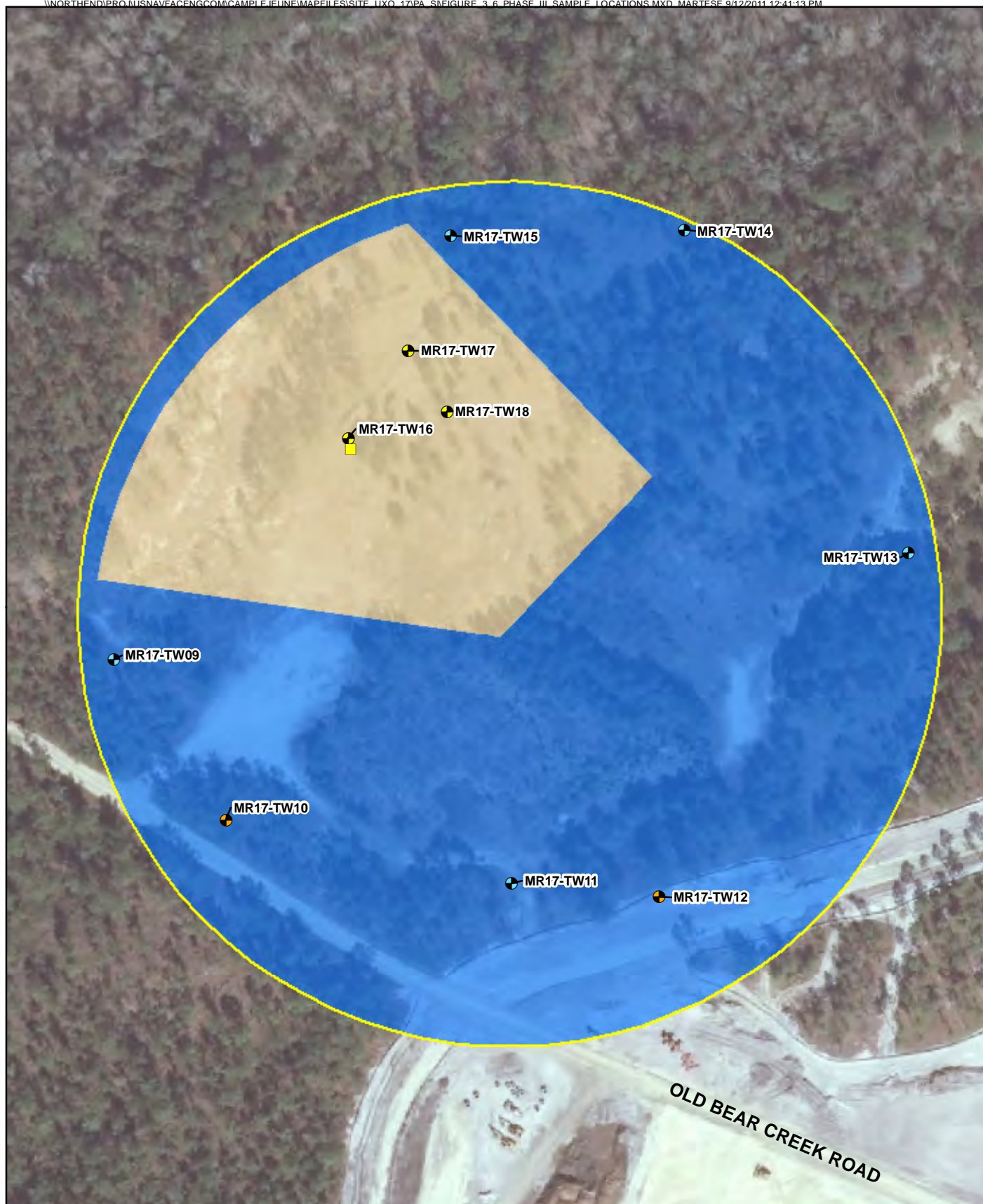


Figure 3-5
Phase II Sampling Locations
Site UXO-17, Former Firing Position 2
PA/SI Report
MCB CamLej
North Carolina

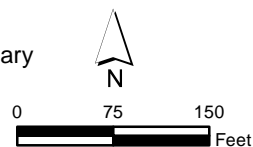




Legend

- Liquid Slurry Drum
- Existing Monitoring Well
- Phase III Monitoring Well
- Water level measurements only
- Phase I Investigation Area (4 acres)
- Phase II Investigation Area (12 acres)

Site UXO-17 Boundary



1 inch = 150 feet

Figure 3-6
Phase III Sampling Locations
Site UXO-17, Former Firing Position 2
PA/SI report
MCB CamLej
North Carolina



Investigation Results

This section presents the findings of the three phases of field investigations.

4.1 DGM Results

4.1.1 Phase I Investigation Area

A total of 1,310 geophysical anomalies and 21 SRAs were identified over the 4-acre area, which was subject to 100 percent DGM. **Figure 4-1** illustrates the distribution of anomalies identified as representing potential subsurface MEC within the area.

Reinforced concrete, metallic debris, and soil mounding were observed on the ground surface throughout this area, which were potentially indicative of similar construction-related debris in the subsurface. Detailed results of the Phase I geophysical survey are presented in **Appendix D**.

4.1.2 Phase II Investigation Area

The DGM survey in the Phase II investigation area covered approximately 9 percent (1.08 acres) of the 12-acre area. As shown on **Figure 4-1**, approximately 1 acre of the investigation area in the southeast corner was inaccessible because it was part of the active base landfill, and approximately 1.9 additional acres could not be surveyed as a result of debris piles and pits and ponded surface water that prevented access. The DGM survey yielded a total of 662 geophysical anomalies that were selected as representing potential subsurface MEC, as shown on **Figure 4-1**. These anomalies were evenly distributed throughout the Phase II investigation area. Metal and concrete debris was observed within the investigation area. **Appendix D** contains detailed results of the Phase II geophysical survey.

4.2 MEC Intrusive Investigation Results

Intrusive investigation of all geophysical anomalies and SRAs representing potential subsurface MEC was completed for the Phase I and Phase II investigation areas. This entailed intrusive investigation of 1,310 anomalies and 21 SRAs in the Phase I investigation area and 662 anomalies in the Phase II investigation area. Data collected during the intrusive investigation of anomalies is provided in **Appendix G**.

One MEC item, a ¼ lb Charge Supplementary, TNT, for Artillery Projectile, was discovered at the location shown on **Figure 4-2** at a depth of 3 feet bgs. The ¼-lb supplemental charge, determined to be a DMM item, was discovered on March 29, 2011 and blown in place on March 30, 2011. Three post-detonation soil samples were also collected. Analytical results from the three post-detonation samples are summarized in **Section 4.3.1**.

The 279 MPPEH items identified were as follows:

- 5.56mm ammunition, unfired (176)
- 5.56mm ammunition, blank (39)
- 7.62mm ammunition (5)
- .223 caliber ammunition, blank (1)
- Landmine, practice, M12 (1)
- Landmine, practice, M12 (18 pieces)
- Landmine, practice, M20 (4)

Grenade, 40mm Parachute, M583, base (2)

- Artillery primer (20)
- Signal, Illuminating Flare, Star, Parachute, M127A1(8)
- Hand signal flare launcher, empty (3)

Grenade, Hand, Smoke, AN-M8, expended (1)

- Fuze collar (1)

These items were stored in a secured and grounded drum onsite and later certified as MDAS. Range-related debris items found onsite were: 5.56mm ammunition links, artillery lifting lugs, safety forks, engineer stakes, banding material, communication wire, razor wire, a tank tread, ammunition cans and lids, washers and bolts. MPPEH and range-related debris were certified as MDAS on DD form 1348-1As.

MDAS originating from Phase I intrusive activities was shipped under chain-of-custody control by Bonetti Explosives to its smelting facility in Columbus, Texas. Destruction of the Phase I MDAS was witnessed by the CH2M HILL UXO Quality Control Specialist on July 6, 2011. MDAS originating from the Phase II investigation is awaiting shipment from CamLej at a consolidation point at Site UXO-21.

Based on concrete, metal drums, and scrap metal encountered during intrusive investigation, it is likely that portions of the site were used for disposal of construction debris. During the Phase I intrusive investigation, approximately 263,500 pounds of other debris items were recovered. These items included items not indicative of munitions use at the site, such as reinforced concrete, drums, rebar, pipes, wire, scrap metal, bolts, nails, and aluminum cans. These items were segregated for on-Base disposal.

The intrusive investigation results for all individual anomalies are summarized in **Table 4-1**. Approximately 2.5 percent of the 1,992 anomalies investigated were identified as MPPEH. Of the investigated anomalies, 50 were classified as “no contact” (that is, the sources of the anomalies were not identified). 34 anomalies were located deeper than 2 feet, and 233 anomalies were shared anomalies that overlapped with previously investigated anomalies.

TABLE 4-1
 Intrusive Investigation Results by Anomaly
 Site UXO-17 Former Firing Position #2
 MCB CamLej, North Carolina

Category	Number of Anomalies	% of Anomalies
MEC (DMM)	1	0.05
Small Arms Ammunition (DMM)	6	0.30
MPPEH	45	2.26
Range Residue	179	8.99
Other Debris	1,437	72.14
No Contact	50	2.50
Deeper than 2 feet	34	1.71
Shared	233	11.70
Roadway	7	0.35
Total Anomalies	1,992	

4.3 Environmental Sampling Results

The results for environmental sampling for Phase I and Phase II investigation areas are summarized together for site-wide evaluation of the potential presence and nature of MC contamination. The Phase III investigation results are summarized separately to evaluate potential VOCs and SVOCs contamination from leakage of the contents of Drum #2 discovered and removed during the Phase I investigation.

4.3.1 Phase I and Phase II Environmental Sampling Results

The following subsections present and summarize the laboratory data from analysis of soil, sediment, surface water, and groundwater samples collected at Site UXO-17 during the Phase I and II investigations. Laboratory analytical data are presented in **Appendix H**. Analytical data validation reports are presented in **Appendix I**.

Soil

Following the third-party data validation of the laboratory analytical data, surface and subsurface soil samples were screened against the NCDENR Federal Remediation Branch Target Soil Screening Levels (NC SSLs) (NCDENR, 2010b), the Adjusted¹ EPA Regional Screening Levels (RSLs) for Chemical Contaminant Tables (EPA, 2011), and MCB CamLej background soil concentrations (two times the mean MCB CamLej background soil concentrations), which were available for metals only (Baker Environmental, Inc., 2001).

¹ Based on noncarcinogenic effects to conservatively account for exposure to multiple constituents.

The May 2011 EPA RSLs replaced the 2008 RSLs that were the proposed screening criteria from the Focused PA/SI Work Plan (CH2M HILL, 2008a) and the 2009 RSLs that were the proposed screening criteria from the UFP-SAP (CH2M HILL, 2010b). The RSLs for non-carcinogenic compounds were adjusted by dividing by 10 to conservatively account for exposure to multiple analytes.

- **Figure 4-3** illustrates the locations of the surface soil samples that exceeded two times the mean MCB CamLej background concentration and at least one of the screening levels (NC SSLs or the Adjusted EPA RSLs). **Figure 4-4** depicts the locations of subsurface soil samples that exceeded two times the mean MCB CamLej background concentration and at least one of the screening levels (NC SSLs or the Adjusted EPA RSLs). The detected concentrations of specific target analytes are summarized in **Table 1** and **Table 3** in **Appendix H**.

Surface Soil Samples from DUs

- **Explosives Residues** – One explosives residue, 1,3,5-trinitro-1,3,5-triazacyclohexane (RDX), was detected in DU surface soil sample MR17-DU03-SS03, but did not exceed any screening criteria.
- **Perchlorate** – Perchlorate was detected in DU surface soil samples MR17-DU01-SS01 and MR17-DU03-SS01. However, the detected concentrations were below the screening criteria.
- **Metals** - Metals detected above regulatory standards are summarized in **Table 4-2**.
 - Nine metals (aluminum, barium, beryllium, calcium, lead, magnesium, nickel, potassium, and zinc) were detected at concentrations greater than two times the mean MCB CamLej background concentration in at least one surface soil sample from Site UXO-17, but did not exceed their respective Adjusted EPA Soil RSLs or NC SSLs. No EPA Soil RSLs or NC SSL were available for calcium.
 - Four additional metals (copper, mercury, sodium, and vanadium) were detected in at least one surface soil sample from Site UXO-17, but they did not exceed two times the mean MCB CamLej concentrations, Adjusted EPA Soil RSLs, or NC SSLs.

TR-02-1 Surface Soil Samples

- **Explosives Residues** – Nine explosives residues (1,3-dinitrobenzene, 2,4,6-trinitrotoluene, 4-Amino-2,6-dinitrotoluene, 2-nitrotoluene, 3-nitrotoluene, 4-nitrotoluene, nitroglycerin, PETN, and RDX) were detected in TR02-1 surface soil samples, but did not exceed any screening criteria.
- **Perchlorate** – Perchlorate was not detected in any of the TR02-1 surface soil samples.
- **Metals** - Metals detected above regulatory standards are summarized in **Table 4-3**.

TABLE 4-2
Metals Exceeding Regulatory Standards in DU Surface Soil Samples
Site UXO-17 Former Firing Position #2
MCB CamLej, North Carolina

Analyte	Frequency of Detection (# detected/ # sampled)	Maximum Concentration (mg/kg)	Minimum Concentration (mg/kg)	Screening Criteria (mg/kg)	Frequency of Exceedances
Arsenic	9/20	1.85	0.523 J	2X Mean BBG	6
				Industrial Adj RSL	2
				Residential Adj RSL	9
				NC SSL	9
Cadmium	10/20	1.5 J	0.0866 J	2X Mean BBG	10
				NC SSL	2
Chromium	20/20	6.58	2.5	2X Mean BBG	3
				NC SSL	12
				Industrial Adj RSL	4
				Residential Adj RSL	20
Cobalt	6/10	2.4	0.33 J	2X Mean BBG	6
				Residential Adj RSL	2
Iron	10/10	2,800	1,340	NC SSL	10
Manganese	10/10	186	4.68	2X Mean BBG	3
				NC SSL	3
				Residential Adj RSL	1
Selenium	7/20	0.331 J	0.187J	NC SSL	5

Adj – adjusted

BBG – Base background

J – Analyte present, value may or may not be accurate or precise

mg/kg – milligrams per kilogram

NC SSL – North Carolina Soil Screening Level

RSL – Regional Screening Level

TABLE 4-3
Metals Exceeding Regulatory Standards in TR-02-1 Surface Soil Samples
Site UXO-17 Former Firing Position #2
MCB CamLej, North Carolina

Analyte	Frequency of Detection (# detected/ # sampled)	Maximum Concentration (mg/kg)	Minimum Concentration (mg/kg)	Screening Criteria (mg/kg)	Frequency of Exceedances
Arsenic	18/24	1.93	0.188 J	2X Mean BBG	8
				Industrial Adj RSL	1
				Residential Adj RSL	14
				NC SSL	14
Cadmium	9/24	0.885	0.0663 J	2X Mean BBG	9
				NC SSL	1
Chromium	24/24	8.73	0.411 J	2X Mean BBG	3
				NC SSL	9
				Industrial Adj RSL	3
				Residential Adj RSL	24
Iron	24/24	3,810	78.8	2X Mean BBG	3
				NC SSL	21
Selenium	18/24	1.15	0.182 J	2X Mean BBG	1
				NC SSL	13

Adj – adjusted

BBG – Base background

J – Analyte present, value may or may not be accurate or precise

mg/kg – milligrams per kilogram

NC SSL – North Carolina Soil Screening Level

RSL – Regional Screening Level

Subsurface Soil Samples

- **Explosives Residues** – Five explosives residues (2,6-dinitrotoluene, 2-amino-4,6-dinitrotoluene, 4-amino-2,6-dinitrotoluene, 4-nitrotoluene, tetryl) were detected in subsurface soil samples, but did not exceed any screening criteria.
- **Perchlorate** – Perchlorate was not detected in any subsurface soil samples.
- **Metals** – Metals detected above regulatory standards are summarized in **Table 4-4**.
 - Seven metals (beryllium, cadmium, calcium, magnesium, potassium, vanadium, and zinc) were detected at concentrations greater than two times the mean MCB CamLej background concentration in at least one subsurface soil sample from Site UXO-17, but did not exceed their respective Adjusted EPA Soil RSLs or NC SSLs (if available).

- Seven additional metals (barium, copper, cobalt, lead, mercury, manganese, and nickel) were detected in at least one subsurface soil sample from Site UXO-17, but they did not exceed two times the mean MCB CamLej concentrations, Adjusted EPA Soil RSLs, or NC SSLs.

TABLE 4-4
Metals Exceeding Regulatory Standards in Subsurface Soil Samples
Site UXO-17 Former Firing Position #2
MCB CamLej, North Carolina

Analyte	Frequency of Detection (# detected/ # sampled)	Maximum Concentration	Minimum Concentration (mg/kg)	Screening Criteria (mg/kg)		Frequency of Exceedances
Aluminum	11/16	13,700	1,410	2X mean BBG	10,369	5
				Residential Adj RSL	7,700	6
Arsenic	14/22	2.98	0.198 J	2X mean BBG	0.626	5
				Industrial Adj RSL	1.6	1
				Residential Adj RSL	0.39	13
				NC SSL	0.29	13
Chromium	22/22	16.3	1.47 J+	2X mean BBG	6.05	4
				NC SSL	3.8	13
				Industrial Adj RSL	5.6	12
				Residential Adj RSL	0.29	21
Iron	17/17	6,590	209	2X mean BBG	3,245	1
				NC SSL	150	16
Selenium	3/22	0.66	0.235 J	2X mean BBG	0.563	1
				NC SSL	0.26	2

Adj – adjusted
BBG – Base background
J – Analyte present, value may or may not be accurate or precise
mg/kg – milligrams per kilogram
NC SSL – North Carolina Soil Screening Level
RSL – Regional Screening Level

Sediment

Sediment samples were screened against the Adjusted EPA Soil RSLs (EPA, 2011). No North Carolina sediment screening levels or MCB CamLej background values for sediment were available for comparison. The detected concentrations of specific target analytes are summarized in **Table 4** in **Appendix H**. **Figure 4-5** depicts the location of the sediment sample that exceeded at least one of the Adjusted EPA Soil RSLs.

- **Explosives Residues** –No explosives residues were detected in the Site UXO-17 sediment sample.

- **Perchlorate** – Perchlorate was detected in the sediment sample at a concentration of 1.04 J mg/kg, but did not exceed the Adjusted EPA Residential Soil RSL.
- **Metals** - Metals detected above regulatory standards are summarized in **Table 4-5**.
 - Thirteen metals (barium, beryllium, cadmium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, vanadium, and zinc) were detected in sediment collected from Site UXO-17, but did not exceed their respective Adjusted EPA Residential Soil RSLs.
 - Three additional metals (calcium, magnesium, and potassium) were detected in sediment collected from Site UXO-17, but did not have Adjusted EPA Soil RSLs for comparison.

TABLE 4-5

Metals Exceeding Regulatory Standards in Sediment Samples
 Site UXO-17 Former Firing Position #2
 MCB CamLej, North Carolina

Analyte	Frequency of Detection (# Detected/ # Sampled)	Detected Concentration (mg/kg)	Screening Criteria (mg/kg)		Frequency of Exceedances
Aluminum	1/1	10,800	Residential Adj RSL	7,700	1
Arsenic	1/1	1.85	Residential Adj RSL	0.39	1
Chromium	1/1	12.3	Residential Adj RSL	0.29	1

Adj – adjusted

RSL – Regional Screening Level

Surface Water

Surface water samples were screened against the North Carolina 15A NCAC 2B standards NC2B-SW- Human Health and Water Supply, National Recommended Water Quality Criteria (NRWQC)-Human Health- Water and Organisms, and NRWQC-Human Health-Organisms, and Adjusted EPA Tap Water RSLs (EPA, 2011) were available for comparison. The detected concentrations of specific target analytes are listed in **Table 5** in **Appendix H**. **Figure 4-5** provides the location of the surface water sample and depicts exceedances of selected screening criteria.

- **Explosives Residues**–One explosives residue, tetryl, was detected in the Site UXO-17 surface water sample at a concentration of 0.14 J microgram per liter (µg/L). The detected concentration did not exceed the EPA Adjusted Tap Water RSL. No NC2B-SW- Human Health and Water Supply or NRWQC-Human Health - Organisms and Water and Organisms screening criteria were available for comparison.
- **Perchlorate** – Perchlorate was detected at a concentration of 42.1 µg/L. Detected concentrations exceeded the EPA Adjusted Tap Water RSL of 2.6 µg/L. No NC2B-SW- Human Health and Water Supply or NRWQC-Human Health - Organisms and Water and Organisms screening criteria were available for comparison.

- **Metals** –
 - Seven total metals (aluminum, barium, cadmium, copper, iron, manganese, and zinc) and six dissolved metals (aluminum, barium, iron, lead, manganese, and zinc) were detected in the Site UXO-17 surface water sample at concentrations below the EPA Adjusted Tap Water RSLs, NC2B-SW-Human Health and Water Supply, and NRWQC-Human Health - Organisms and Water and Organisms screening criteria.
 - Four additional metals (calcium, magnesium, potassium, and sodium) were detected in total and dissolved forms in the surface water sample collected from Site UXO-17, but did not have EPA Adjusted Tap Water RSLs, NC2B-SW-Human Health and Water Supply, and NRWQC-Human Health - Organisms and Water and Organisms screening criteria for comparison.

Groundwater

Groundwater results were screened against the North Carolina Groundwater Quality Standards (NCGWQS) (NCAC Title 15A, Subchapter 2L) (NCDENR, 2010a), EPA Tap Water RSLs (EPA, 2011), and MCB CamLej background groundwater concentrations (two times the mean MCB CamLej background groundwater concentration), which were available for inorganic analytes only (Baker Environmental, Inc., 2001). The NCGWQS are the maximum allowable concentrations resulting from any discharge of contaminants to the land or waters of the state that may be tolerated without creating a threat to human health or otherwise rendering the groundwater unsuitable for its intended purpose.

The detections and exceedances of NCGWQS, EPA RSLs, and/or two times the MCB CamLej background levels are shown in **Table 6** in **Appendix H**. **Figure 4-6** depicts the locations of groundwater samples that exceed two times the mean MCB CamLej background concentration or at least one of the screening levels (NCGWQS or EPA Tap Water RSLs).

- **Explosives Residues** – Four explosives residues, (2-nitrotoluene, 3-nitrotoluene, RDX, and tetryl) were detected in groundwater samples, but did not exceed any screening criteria.
- **Perchlorate** – Perchlorate was detected in five groundwater samples. It was detected at a maximum concentration of 0.199 J µg/L, but did not exceed the EPA Adjusted Tap Water RSL of 2.6 µg/L. No NC2B-SW-Human Health and Water Supply or NRWQC-Human Health - Organisms and Water and Organisms screening criteria were available for perchlorate.
- **Metals** – Metals detected above regulatory standards are summarized in **Table 4-6**.
 - Four total metals (aluminum, lead, potassium, and selenium) and one dissolved metal (potassium) were detected at concentrations above two times the mean MCB CamLej background concentration in at least one groundwater sample from Site UXO-17, but did not exceed Adjusted EPA Tap Water RSLs or NCGWQS.
 - Nine additional total metals (barium, beryllium, calcium, copper, magnesium, nickel, sodium, vanadium, and zinc) and twelve dissolved metals (aluminum, barium, calcium, copper, iron, lead, magnesium, nickel, selenium, sodium,

vanadium, and zinc) were detected but did not exceed concentrations above two times the mean MCB CamLej background concentration, Adjusted EPA Tap Water RSLs, or NCGWQS.

TABLE 4-6

Metals Exceeding Regulatory Standards in Groundwater Samples
Site UXO-17 Former Firing Position #2
MCB CamLej, North Carolina

Analyte	Frequency of Detection (# detected/ # sampled)	Maximum Concentration (µg/L)	Minimum Concentration (µg/L)	Screening Criteria (µg/L)		Frequency of Exceedances
Total Chromium	6/13	10.4	0.643	2X BBG	3.13	2
				Adj Tap RSL	0.043	6
				NC2LGW	10	1
Total Cobalt	2/8	4.3	1.28 J	2X BBG	3.4	1
				Adj Tap RSL	1.1	2
Total Iron	8/8	723 J-	47.3 J-	NC2LGW	300	3
Total Manganese	8/8	80.8	5.13	NC2LGW	50	3
Dissolved Chromium	3/3	1.53 J	0.616 J	Adj Tap RSL	0.043	3
Dissolved Manganese	3/3	78	18.7	NC2LGW	50	1

Adj – adjusted

BBG – Base background

J – Analyte present, value may or may not be accurate or precise

mg/kg – milligrams per kilogram

NC2LGW – NCAC Title 15A, Subchapter 2L Groundwater Standard

RSL – Regional Screening Level

Post-detonation Soil

Three post-detonation surface soil samples were collected for analysis of explosives residues (including PETN and nitroglycerine) and perchlorate from the detonation location of the recovered DMM item within the Phase I investigation area of Site UXO-17. Samples MR17-SS20-11A and MR17-SS20D-11A were collected from the detonation crater and sample MR17-SS21-11A was collected 15 meters from the crater. Detected analytical constituents were compared to two times the mean base background concentration, EPA RSLs for Residential and Industrial Soils (EPA, 2011) and NC SSLs (NCDENR, 2010b). The detected concentrations of specific target analytes for the post-detonation samples are summarized in **Table 1 in Appendix H**. A summary of the analytical results is provided below.

- **Explosives residues** – Four explosives residues (1,3,5-trinitrobenzene, 2-amino-2,6-dinitrotoluene, 4-amino-2,6-dinitrotoluene, and RDX), were detected in at least one post-detonation soil sample. None of the detected concentrations exceeded EPA RSLs, however. No NC SSLs are established for explosives residues.

- **Metals** - Metals detected above regulatory standards are summarized in **Table 4-7**.
 - Five metals (cadmium, calcium, magnesium, potassium, and zinc) were detected at concentrations greater than two times the mean MCB CamLej background concentration in at least one subsurface soil sample from Site UXO-17, but did not exceed their respective Adjusted EPA Soil RSLs or NC SSLs (if available).
 - Eight additional metals (aluminum, barium, beryllium, copper, lead, mercury, nickel, and vanadium) were detected in at least one post-detonation soil sample from Site UXO-17, but they did not exceed two times the mean MCB CamLej concentrations, Adjusted EPA Soil RSLs, or NC SSLs.

TABLE 4-7

Metals Exceeding Regulatory Standards in Post-Detonation Samples
 Site UXO-17 Former Firing Position #2
 MCB CamLej, North Carolina

Analyte	Frequency of Detection (# detected/ # sampled)	Maximum Concentration (mg/kg)	Minimum Concentration (mg/kg)	Screening Criteria (mg/kg)		Frequency of Exceedances
Arsenic	3/3	1.19	1.06	2X BBG	0.626	3
				Residential Adj RSL	0.39	3
				NC SSL	0.29	3
Chromium	3/3	5.57	4.68	NC SSL	3.8	3
				Residential Adj RSL	0.29	3
Iron	3/3	3,210	2,580	NC SSL	150	3
Manganese	3/3	14.1	12.2	2X BBG	13.7	2
Selenium	2/3	0.284 J	0.215 J	NC SSL	0.26	1

Adj – adjusted

BBG – Base background

J – Analyte present, value may or may not be accurate or precise

mg/kg – milligrams per kilogram

NC SSL – North Carolina Soil Screening Level

RSL – Regional Screening Level

4.3.2 Phase III Waste and Groundwater Sampling Results

Waste

The sample collected from Drum #1 was analyzed to characterize the contents of the drum. Of the TCLP VOC, SVOCs, pesticides and herbicides, and metals analyses, only the TCLP metal barium was detected at a concentration of 0.256 J mg/kg. The drum was characterized as non-hazardous waste and disposed in accordance with IDW procedures described in **Section 3.1.6**.

The sample collected from Drum #2 was analyzed as a soil sample because most of the free liquid had evaporated before sampling. The sample was found to contain detectable concentrations of metals (arsenic, barium, cadmium, chromium, and lead), VOCs (n-butylbenzene, sec-butylbenzene, iso-propylbenzene, p-isopropyltoluene, naphthalene, n-propylbenzene, 1,2,4-trichlorobenzene, 1,3,5-trimethylbenzene, and o-xylene), and SVOCs (2,4-dimethylphenol, 1-methylnaphthalene, 2-methylnaphthalene) by TCLP. The contents of the drum were characterized as a hazardous waste due to ignitability. This report is provided in **Appendix H**.

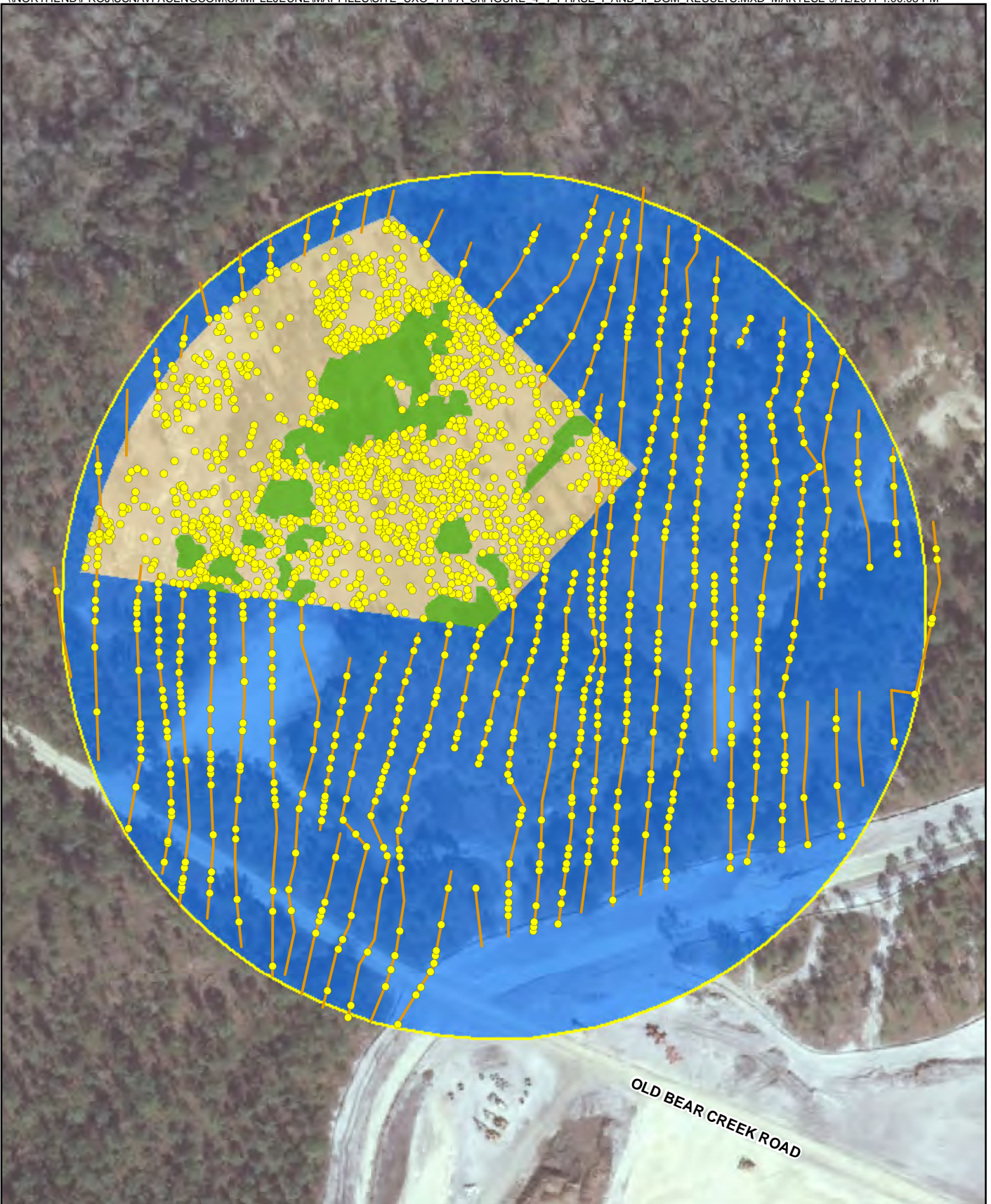
Two additional samples were collected from Drum #2 to characterize the contents of the drum. It contained detectable concentrations of six SVOCs (anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, fluoranthene, phenanthrene, and pyrene). The detected concentrations of these analytes are summarized in **Table 2** of **Appendix H**. None of these analytes exceeded regulatory screening criteria.

The contents of the drum were likely composed of either a kerosene, a paint thinner, or a combination of both based on the flashpoint and C-range hydrocarbons detected.

Soil samples collected from excavated soils where Drum #2 had leaked were also characterized for IDW disposal. Barium was detected by TCLP at concentrations of 0.286 J-0.317 J mg/kg in all four samples. In addition, lead was detected by TCLP at a concentration of 0.0154 mg/kg in sample MR17-IDW01-060211-SO. The drums containing the excavated soil were characterized and disposed as non-hazardous waste.

Groundwater

Groundwater samples were collected during the Phase III investigation to confirm that the groundwater was not impacted by the leaking drum, Drum #2. Groundwater samples were analyzed for VOCs and SVOCs, the suspected contents of Drum #2. Groundwater results for the Phase III sampling activity were screened against the NCGWQS and EPA Tap Water RSLs. Two VOCs, carbon disulfide and toluene, were detected in one of eight samples, but were not present in concentrations exceeding regulatory standards. SVOCs were not detected. The Phase III groundwater sample analytical detections are summarized in **Table 7** in **Appendix H**.



Legend

- Geophysical Anomaly (greater than 3 mV)
- DGM Transects
- Saturated Response Area
- Phase I Investigation Area (4 acres, 100% DGM survey)
- Phase II Investigation Area (12 acres, DGM transects)
- Site UXO-17 Boundary

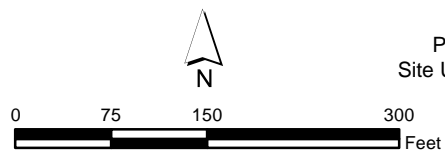
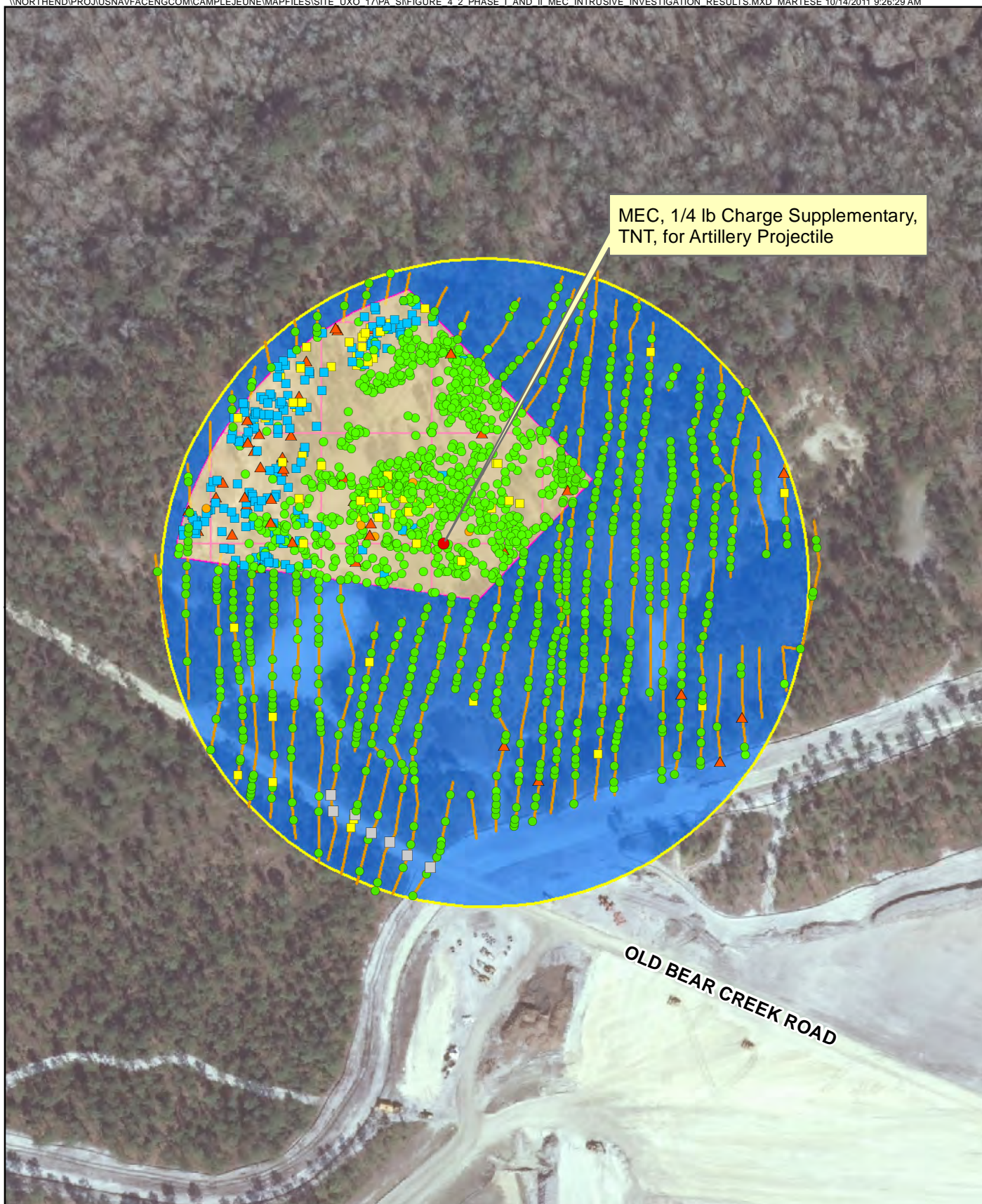


Figure 4-1
Phase I and Phase II DGM Results
Site UXO-17, Former Firing Position 2
PA/SI Report
MCB CamLej
North Carolina





Legend

Investigated Anomaly

- Cultural Debris
- ▲ Unexpended Small Arms Ammunition
- ▲ MPPEH
- MEC
- No Contact
- RRD
- Road

- DGM Transects
- Geophysical Grid
- Phase I Investigation Area (4 acres)
- Phase II Investigation Area (12 acres)
- Site UXO-17 Boundary

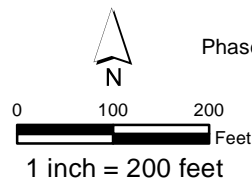
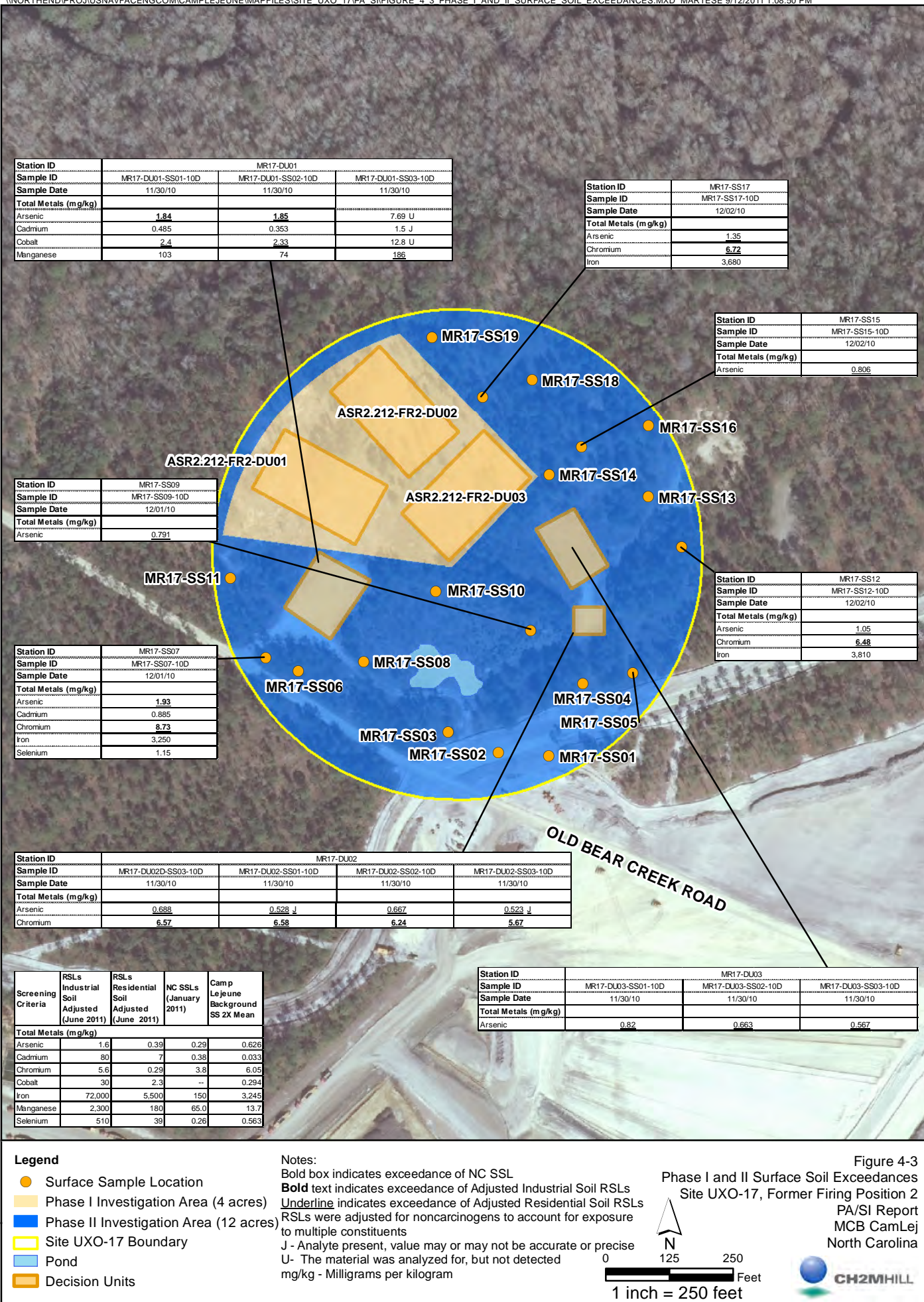
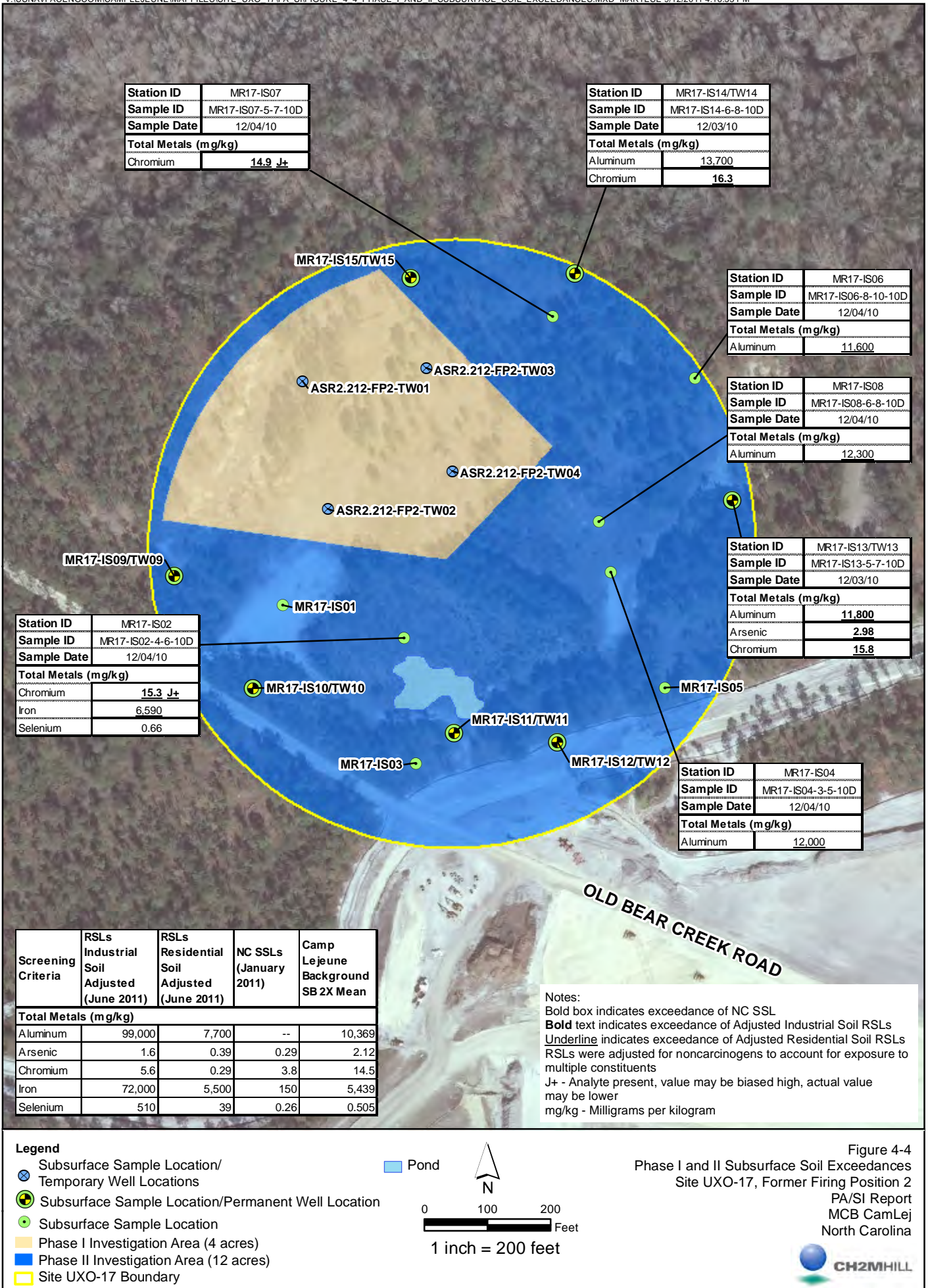
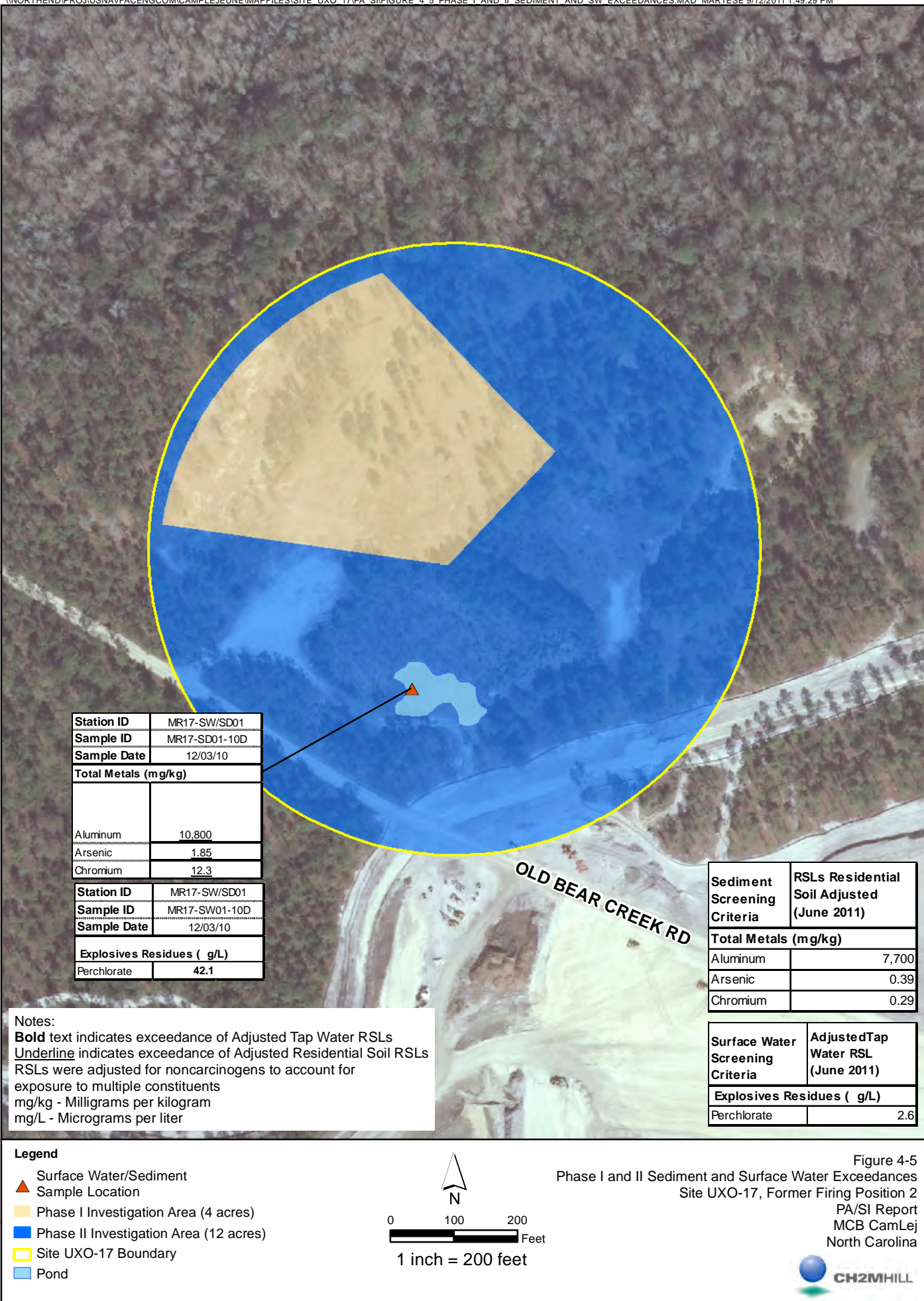


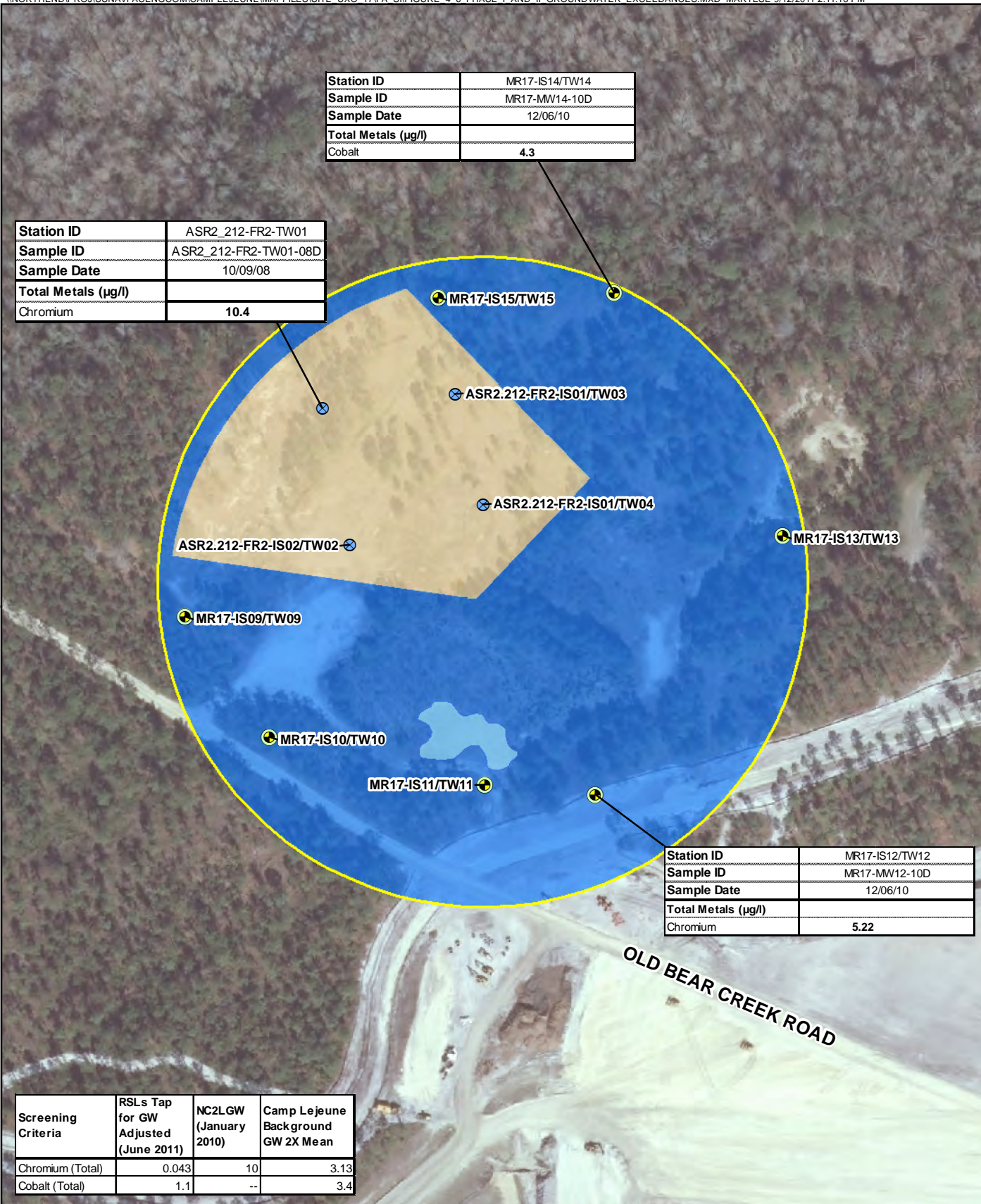
Figure 4-2
Phase I and II MEC Intrusive Investigation Results
Site UXO-17, Former Firing Position 2
PA/SI Report
MCB CamLej
North Carolina











Legend

- Subsurface Sample Location/ Temporary Well Locations
- Subsurface Sample Location/ Permanent Well Location
- Pond
- Phase I Investigation Area (4 acres)
- Phase II Investigation Area (12 acres)
- Site UXO-17 Boundary

Notes:
 Bold box indicates exceedances of NC2LGW
 Bold text indicates exceedances of Adjusted Tap Water RSLs
 RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents
 µg/L - Micrograms per liter

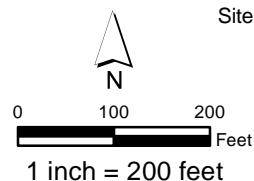


Figure 4-6
 Phase I and II Groundwater Exceedances
 Site UXO-17, Former Firing Position 2
 PA/SI Report
 MCB CamLej
 North Carolina



Human Health Risk Screening

A conservative human health risk screening (HHRS) was performed to assess the potential for human health risks associated with exposure to UXO-17 site media (soil, surficial aquifer groundwater, surface water, and sediment). The results of the HHRS provide an indication of potential risks from constituents of potential concern (COPCs), and are used to help evaluate whether future unrestricted (i.e., residential) use of the site is acceptable or if the site requires further evaluation (e.g., additional data collection, a baseline risk assessment). The site conceptual exposure model and the human health screening evaluation methodology, along with the results of the screening, are presented below.

The data included in the HHRS were all validated. The samples evaluated in the HHRS include soil and groundwater data collected during the Phase I investigation in the 4-acre portion of the site (October 2008); soil, groundwater, surface water, and sediment data collected during the Phase II investigation in the 12-acre portion of the site (November and December 2010); and groundwater data collected during the Phase III investigation in the vicinity of the former location of the buried leaking drum (July 2011), as identified in **Table 5-1**. The validated data were evaluated to determine the reliability of the data for use in the HHRS. A review of the data identified the following criteria for data usability:

- Estimated values flagged with a N, J, J+, or J- qualifier were treated as detected concentrations
- Values flagged with a R qualifier (rejected) were not evaluated in the HHRS
- For duplicate samples, the maximum concentration between the two samples was used as the sample concentration

5.1 Human Health Conceptual Site Model

The human health CSM presents an overview of site conditions, potential contaminant migration pathways, and exposure pathways to potential receptors. The human health CSM is presented on **Figure 5-1**. Sections 2.2 and 2.3 present the site history and setting.

Site UXO-17 was reportedly used for munitions-related activities from the 1950s through at least 1985. The site is not currently used, and public access to the site is restricted. However, there is evidence that construction debris has been dumped at the site in the past. The surface water on the site is not used as a potable water supply. The area is wet year round due to the high groundwater water table. No fish were observed in the surface water and people are not known to fish at the site.

Current receptors may include site workers (sporadically accessing the site for activities such as dumping) and adult and youth trespassers. These current receptors could come in contact with surface soil and surface water and sediment. Exposure routes for surface soil include incidental ingestion of and dermal contact with the surface soil, and inhalation of

particulate emissions from surface soil. Exposure routes for surface water and sediment include incidental ingestion and dermal contact. Volatile organic constituents (VOCs) are not associated with historic site use (munitions-related activities), and therefore inhalation of VOCs from soil, surface water, or sediment are not considered potential site-related exposure pathways.

Currently, the future plans for site use include expansion of the base landfill and/or use of site material as borrow material. Therefore, the most likely potential future receptors are site workers and trespassers/visitors. Although unlikely based on planned future use of the site and base, future receptors could also include residents and construction workers. Future receptors could be exposed to subsurface soil (in addition to the surface soil) if future residential houses or industrial buildings or piping are constructed at the site, or the site is used for landfill or borrow material activities, and the soil is re-worked, bringing the subsurface soil to the surface. Exposure routes include incidental ingestion of and dermal contact with the soil, and inhalation of particulate emissions from soil. The future receptors could also contact the surface water and sediment.

Potable water supplies for MCB CamLej and the surrounding residential area are provided by water supply wells that pump groundwater from the Castle Hayne aquifer. Although freshwater is present within the surficial, Castle Hayne, Beaufort, and Pee Dee aquifers, all of which are located below MCB CamLej, only the Castle Hayne aquifer is used by MCB CamLej as a water supply source (Cardinell, Berg, and Lloyd, 1993). There is one active water supply well (PSW-HP709) within a 0.65-mile radius of Site UXO-17. The groundwater use patterns are already established for the Base and area around Site UXO-17, thus use of site groundwater for industrial or residential purposes is unlikely. However, state and federal governing policies assume that underground fresh water resources are potable, and should be maintained as such. Therefore, it is assumed that the groundwater beneath the site could be used as a potable water supply. The residents would be exposed through ingestion, dermal contact, and inhalation while bathing. Additionally, due to the groundwater depth (less than 10 feet bgs), construction workers could be exposed to the groundwater by dermal contact in an excavation during construction activities.

Volatile organic compounds (VOCs) are not associated with past site use; however, three volatile compounds were detected in groundwater. Therefore, vapor intrusion into current or future buildings was considered a potentially complete exposure pathway and was evaluated in the HHRS.

5.2 Methodology

The HHRS was conducted in three steps using a risk ratio technique (Navy, 2000). If COPCs were identified after Step 1, they were evaluated in Step 2. If COPCs were identified after Step 2, they were evaluated in Step 3. The three-step screening process is described below.

5.2.1 Step 1

The maximum detected concentrations for each medium were compared to EPA Regional Screening Levels (RSLs; EPA, 2011), additional human health screening levels (if appropriate, such as for surface water), and two times the mean Base background concentrations (for metals only). RSLs based on noncarcinogenic effects were divided by 10

to account for exposure to multiple constituents (i.e., were adjusted to a hazard quotient (HQ) of 0.1, from the HQ of 1 used on the RSL table). RSLs based on carcinogenic endpoints were used as presented in the RSL table and are based on a carcinogenic risk of 1×10^{-6} .

The soil and sediment data were compared to residential soil RSLs. Although trespassers/visitors, construction workers, and industrial workers are potential receptors for soil in addition to residential receptors, the soil data were only screened against residential soil RSLs. Residential soil RSLs are more conservative (i.e. lower) than the industrial soil RSLs, and are therefore protective of all potential receptors.

The groundwater data were compared to tap water RSLs. Groundwater data were also compared to National Primary Drinking Water Regulations maximum contaminant levels (MCLs) and the North Carolina Groundwater Quality Standards (NCGWQS; 15A NCAC 2L), however, these comparisons were not used to identify or eliminate the groundwater COPCs to carry forward to Step 2.

The groundwater data were also compared to groundwater risk-based screening levels (RBSLs) protective of the vapor intrusion exposure pathway calculated using the methodology described in Appendix D of the *OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)* (EPA, 2002).

The surface water data were compared to North Carolina water quality standards for human health, if available. The North Carolina water quality standards for human health are based on consumption of fish. If a North Carolina water quality standard for human health value was not available, but a North Carolina water quality standard for water supply (which is based on consumption of water and fish) was available, the water supply value was used. The surface water data were also compared to National Recommended Water Quality Criteria (NRWQC) for consumption of organisms, if available. If a NRWQC for consumption of organisms was not available, but a value for consumption of water and organisms was available, the consumption of water and organisms value was used. If neither North Carolina water quality standards nor NRWQC values were available, the tap water RSL was used to identify surface water COPCs.

If the maximum detected concentration in soil, groundwater, surface water, or sediment exceeded the applicable screening value and background concentration, the screening level risk evaluation proceeded to Step 2.

In addition to comparing the detected concentrations to the screening levels, the detection limits for non-detected analytes were compared to the screening levels. Non-detected analytes with detection limits exceeding the screening level were not identified as COPCs to carry forward to Step 2, but were discussed below to evaluate the potential for underestimating the total risks.

5.2.2 Step 2

For analytes identified as COPCs in Step 1, a corresponding risk level was calculated using the following equation:

$$\text{corresponding risk level} = \frac{\text{concentration} \times \text{acceptable risk level}}{\text{RSL}}$$

The concentration is the maximum detected concentration (the same concentration that was used in Step 1). The acceptable risk level is 1 for noncarcinogens and 10^{-6} for carcinogens. RSLs for noncarcinogenic effects were not adjusted by 10 as was done in Step 1, they are used as presented in the RSL table.

All of the corresponding risk levels for each analyte within a media were summed to calculate the cumulative corresponding hazard index (HI) (for noncarcinogens) and cumulative corresponding carcinogenic risk (for carcinogens). A cumulative corresponding HI was also calculated for each target organ/effect. If the cumulative corresponding HI for a target organ/effect is greater than 0.5, or the cumulative corresponding carcinogenic risk is greater than 5×10^{-5} , the analytes contributing to these values are retained as COPCs and carried forward to Step 3.

5.2.3 Step 3

A corresponding risk level was calculated as discussed above for Step 2; however, the 95 percent upper confidence limit (UCL) was used in place of the maximum detected concentration, if more than five samples were available for that media, to obtain a more site-specific risk ratio. If the cumulative corresponding HI by target organ/effect is greater than 0.5, or the cumulative corresponding carcinogenic risk is greater than 5×10^{-5} , then constituents contributing to these values were considered COPCs.

ProUCL Version 4.1 (EPA, 2010b) was used to test the data distribution and calculate the 95 percent UCLs used for the Step 3 risk ratio calculations.

5.3 Human Health Risk Screening Results

The human health risk-based screening (comparison to risk-based criteria and background levels, Step 1) and risk ratio evaluation (Steps 2 and 3, if applicable) were performed for surface soil, subsurface soil, groundwater, surface water, and sediment.

5.3.1 Surface Soil

Tables 2.1 and 2.1a in **Appendix J** show the risk-based screening and risk ratio evaluation for surface soil. As shown in Table 2.1, **Appendix J**, arsenic, chromium, cobalt, and manganese were identified as COPCs for evaluation in Step 2. Based on Step 2 of the screening process (risk ratio using maximum detected concentration, (Table 2.1a, **Appendix J**), all of the Step 1 COPCs were eliminated as COPCs.

Exposure to surface soil is not expected to result in any unacceptable human health risks and no further evaluation for surface soil is necessary based on potential human exposure and risk.

5.3.2 Subsurface Soil

Tables 2.2 through 2.2b in **Appendix J** show the risk-based screening and risk ratio evaluation for subsurface soil. As shown in Table 2.1, **Appendix J**, aluminum, arsenic, chromium, and iron were identified as COPCs for evaluation in Step 2. Based on Step 2 of the screening process (risk ratio using maximum detected concentration, (Table 2.2a, **Appendix J**), arsenic and chromium were identified as COPCs for evaluation in Step 3. Based on Step 3 of the screening process (risk ratio using 95 percent UCL), arsenic and chromium were eliminated as COPCs. Therefore, exposure to subsurface soil is not expected to result in any unacceptable human health risks and no further evaluation for subsurface soil is necessary based on potential human exposure and risk.

5.3.3 Groundwater

Tables 2.3 through 2.5 Supplement A in **Appendix J** show the results of the risk-based screening and risk ratio evaluation for groundwater. As shown in Table 2.3, **Appendix J**, chromium and cobalt were identified as COPCs for evaluation in Step 2. Based on Step 2 of the screening process (risk ratio using maximum detected concentration, Table 2.3a, **Appendix J**), cobalt was eliminated as a COPC, however, chromium could not be eliminated as a COPC. Based on Step 3 of the screening process (risk ratio using 95 percent UCL), chromium was identified as a COPC.

All of the groundwater samples were analyzed for total chromium, and three of the groundwater samples were analyzed for hexavalent chromium. Hexavalent chromium was not detected in any of these three samples, and the detection limit was below the tap water RSL for hexavalent chromium. The hexavalent chromium tap water RSL was also used to evaluate the total chromium data, as the hexavalent chromium tap water RSL is more conservative than the trivalent chromium tap water RSL. Based on the use of the hexavalent chromium RSL, total chromium was identified as a COPC using on the three step screening process. However, when compared to the trivalent chromium tap water RSL, total chromium would not be considered a COPC. Additionally, the concentrations of chromium detected in the groundwater are below the MCL and NCGWQS for total chromium. Therefore, since hexavalent chromium was not detected in the three groundwater samples analyzed for hexavalent chromium, and the concentrations of total chromium detected at the site did not exceed the MCL or NCGWQC for total chromium or the tap water RSL for trivalent chromium, chromium is not considered a COPC for Site UXO-17.

No constituents were identified as COPCs for the vapor intrusion from groundwater to indoor air pathway for the current (or future) industrial (Table 2.4, **Appendix J**) or residential (Table 2.5, **Appendix J**) scenarios.

Exposure to groundwater is not expected to result in any unacceptable human health risks and no further evaluation for groundwater is necessary based on potential human exposure and risk.

5.3.4 Surface Water

Tables 2.6 and 2.6a in **Appendix J** show the risk-based screening and risk ratio evaluation for surface water. As shown in Table 2.6, **Appendix J**, perchlorate was identified as a COPC for evaluation in Step 2. Based on Step 2 of the screening process (risk ratio using maximum detected concentration, (Table 2.6a, **Appendix J**), perchlorate could not be eliminated as a COPC. The screening value used to evaluate perchlorate in surface water is the tap water RSL since there are no North Carolina water quality standards or NRWQC for perchlorate. The tap water RSL is based on potable use of water because there is no other available or more appropriate screening level for perchlorate in surface water, the tap water RSL was used and is extremely conservative. Although perchlorate was identified as a COPC based on the conservative screening process for surface water, it is unlikely there would be any unacceptable risks associated with exposure to perchlorate in the site surface water. Therefore, based on the one available surface water sample collected from the pond, exposure to surface water is not expected to result in any unacceptable human health risks.

5.3.5 Sediment

Tables 2.7 and 2.7a in **Appendix J** show the risk-based screening and risk ratio evaluation for sediment. As shown on Table 2.7, **Appendix J**, aluminum, arsenic, and chromium were identified as COPCs for evaluation in Step 2. Based on Step 2 of the screening process (risk ratio using maximum detected concentration, (Table 2.1a, **Appendix J**), all of the Step 1 COPCs were eliminated as COPCs. Therefore, based on the one sediment sample collected from the site pond, exposure to sediment is not expected to result in any unacceptable human health risks.

5.3.6 Non-detected analytes

Antimony and thallium were the only non-detected constituents in surface soil with detection limits above their respective screening values. Only one of the 17 samples for antimony and only one of the 28 samples for thallium had a detection limit above the screening level.

The detection limits for 1,3-dinitrobenzene and 3-nitrotoluene in subsurface soil samples collected in October 2008 slightly exceeded the screening level. However, as the detection limits for the 2010 samples are all below the screening level, and those that exceed the screening level (the 2008 samples) are within an order of magnitude, it is not expected that 1,3-dinitrobenzene or 3-nitrotoluene would be present in the subsurface soil and levels of potential concern for human health. Additionally, although hexavalent chromium and thallium were not detected in the subsurface soil, the detection limits slightly exceeded the screening values for hexavalent chromium and thallium. However, the detection limits for hexavalent chromium and thallium were within an order of magnitude of the screening levels, and if present at concentrations below the detection limits.

For groundwater, there were a few non-detected explosives with detection limits above the screening values. The majority of the detection limits that were above the screening levels were associated with the samples collected in October 2008, while the detection limits for the samples collected in 2010 were generally below the screening levels. The detection limits that did exceed the screening levels were within an order of magnitude of the screening levels. Additionally, there were some VOCs and SVOCs with detection limits

above the screening levels. The detection limits were generally either within an order of magnitude of the screening value or were close to or below the MCL. There were also two non-detected metals with detection limits above the screening values. However, the detection limits were either within an order of magnitude of the screening value or background concentration, and were below the MCL.

One non-detected explosive and two non-detected metals in surface water had detection limits slightly above their respective screening levels. However, the detection limits were within an order of magnitude of the screening levels.

There was one non-detected metal in sediment had a detection limit above the screening value. However, the detection limit was within an order of magnitude of the screening level.

Based on the evaluation of detection limits for non-detected analytes in all media, there are not expected to be any non-detected analytes present at the site that would result in unacceptable risks, or changes to the results of the HHRS.

5.2 Human Health Risk Screening Summary

Based on the evaluation of available surface soil, subsurface soil, groundwater, surface water, and sediment data, results of the HHRS indicate that exposure to these media at Site UXO-17 would not result in any potentially unacceptable risks to human health.

TABLE 5-1

Summary of Samples Evaluated in the Human Health Risk Screening

Site UXO-17 Former Firing Position #2

MCB CamLej, North Carolina

Medium	Date of Sampling	Sample	Parameters
Surface Soil	10/09/08	ASR2.212-FR2-DU01-SS01-08D	Explosives, Metals
	10/09/08	ASR2.212-FR2-DU01-SS02-08D	Explosives, Metals
	10/09/08	ASR2.212-FR2-DU01-SS03-08D	Explosives, Metals
	10/09/08	ASR2.212-FR2-DU02-SS01-08D	Explosives, Metals
	10/09/08	ASR2.212-FR2-DU02-SS01D-08D ¹	Explosives, Metals
	10/09/08	ASR2.212-FR2-DU02-SS02-08D	Explosives, Metals
	10/09/08	ASR2.212-FR2-DU02-SS03-08D	Explosives, Metals
	10/09/08	ASR2.212-FR2-DU03-SS01-08D	Explosives, Metals
	10/09/08	ASR2.212-FR2-DU03-SS02-08D	Explosives, Metals
	10/09/08	ASR2.212-FR2-DU03-SS03-08D	Explosives, Metals
	11/30/10	MR17-DU01-SS01-10D	Explosives, Metals
	11/30/10	MR17-DU01-SS02-10D	Explosives, Metals
	11/30/10	MR17-DU01-SS03-10D	Explosives, Metals
	11/30/10	MR17-DU02D-SS03-10D ¹	Explosives, Metals
	11/30/10	MR17-DU02-SS01-10D	Explosives, Metals
	11/30/10	MR17-DU02-SS02-10D	Explosives, Metals
	11/30/10	MR17-DU02-SS03-10D	Explosives, Metals
	11/30/10	MR17-DU03-SS01-10D	Explosives, Metals
	11/30/10	MR17-DU03-SS02-10D	Explosives, Metals
	11/30/10	MR17-DU03-SS03-10D	Explosives, Metals
	12/01/10	MR17-SS01-10D	Explosives, Metals
	12/01/10	MR17-SS02-10D	Explosives, Metals
	12/01/10	MR17-SS03-10D	Explosives, Metals
	12/01/10	MR17-SS04-10D	Explosives, Metals
	12/01/10	MR17-SS05-10D	Explosives, Metals
	12/01/10	MR17-SS06-10D	Explosives, Metals
	12/01/10	MR17-SS07-10D	Explosives, Metals
	12/01/10	MR17-SS08-10D	Explosives, Metals
	12/01/10	MR17-SS08D-10D ¹	Explosives, Metals
	12/01/10	MR17-SS09-10D	Explosives, Metals
	12/02/10	MR17-SS10-10D	Explosives, Metals
	12/01/10	MR17-SS11-10D	Explosives, Metals
	12/01/10	MR17-SS11D-10D ¹	Explosives, Metals
	12/02/10	MR17-SS12-10D	Explosives, Metals
	12/02/10	MR17-SS13-10D	Explosives, Metals
	12/02/10	MR17-SS14-10D	Explosives, Metals
	12/02/10	MR17-SS15-10D	Explosives, Metals
	12/02/10	MR17-SS16-10D	Explosives, Metals
	12/02/10	MR17-SS17-10D	Explosives, Metals
	12/02/10	MR17-SS18-10D	Explosives, Metals
	12/02/10	MR17-SS19-10D	Explosives, Metals
Subsurface Soil	10/07/08	ASR2.212-FR2-IS01-3-5-08D	Explosives, Metals
	10/07/08	ASR2.212-FR2-IS01D-3-5-08D ¹	Explosives, Metals
	10/07/08	ASR2.212-FR2-IS02-4-6-08D	Explosives, Metals
	10/07/08	ASR2.212-FR2-IS03-5-7-08D	Explosives, Metals
	10/07/08	ASR2.212-FR2-IS04-5-7-08D	Explosives, Metals

TABLE 5-1

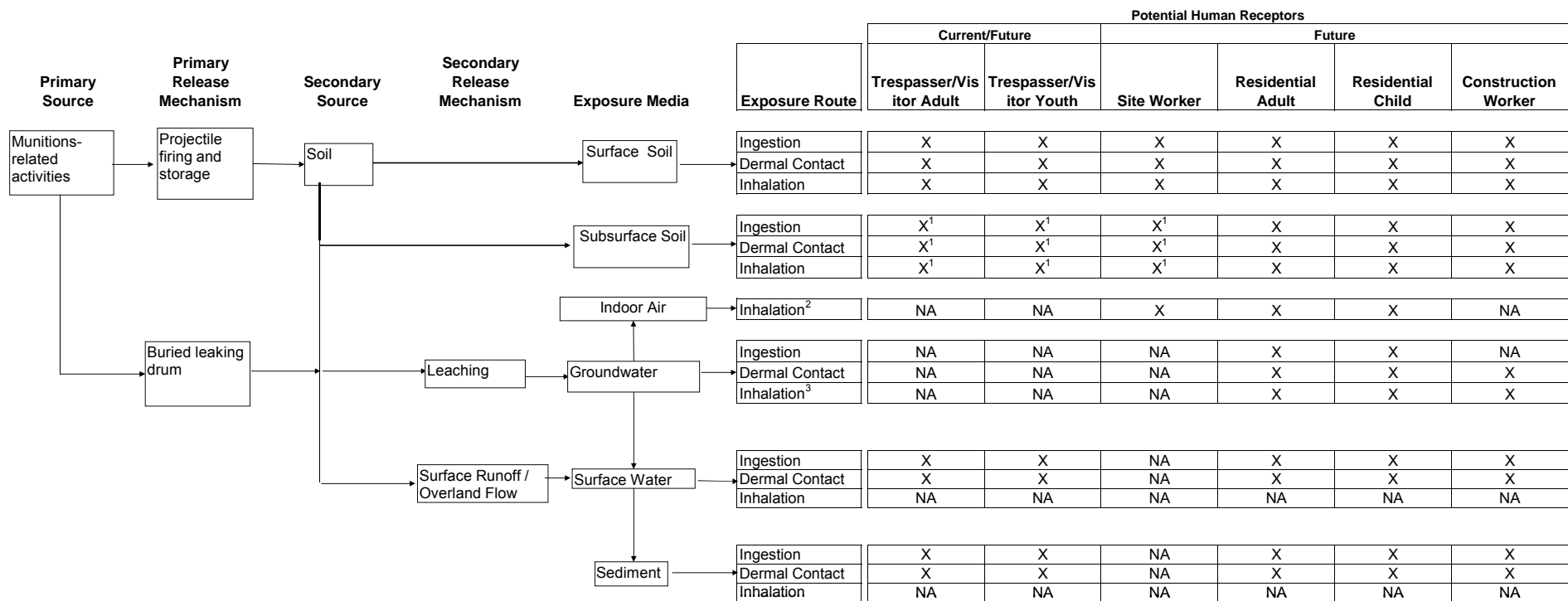
Summary of Samples Evaluated in the Human Health Risk Screening

Site UXO-17 Former Firing Position #2

MCB CamLej, North Carolina

Medium	Date of Sampling	Sample	Parameters
Subsurface Soil (continued)	12/04/10	MR17-IS01-2-4-10D	Explosives, Metals
	12/04/10	MR17-IS02-4-6-10D	Explosives, Metals
	12/04/10	MR17-IS03-3-5-10D	Explosives, Metals
	12/04/10	MR17-IS04-3-5-10D	Explosives, Metals
	12/04/10	MR17-IS05-1-3-10D	Explosives, Metals
	12/04/10	MR17-IS06-8-10-10D	Explosives, Metals
	12/04/10	MR17-IS07-5-7-10D	Explosives, Metals
	12/04/10	MR17-IS07D-5-7-10D ¹	Explosives, Metals
	12/04/10	MR17-IS08-6-8-10D	Explosives, Metals
	12/01/10	MR17-IS09-3-5-10D	Explosives, Metals
	12/01/10	MR17-IS10-3-5-10D	Explosives, Metals
	12/02/10	MR17-IS11-4-6-10D	Explosives, Metals
	12/02/10	MR17-IS12-5-7-10D	Explosives, Metals
	12/03/10	MR17-IS13-5-7-10D	Explosives, Metals
	12/03/10	MR17-IS14-6-8-10D	Explosives, Metals
	12/03/10	MR17-IS14D-6-8-10D ¹	Explosives, Metals
	12/02/10	MR17-IS15-1-3-10D	Explosives, Metals
Groundwater	10/09/08	ASR2.212-FP2-TW01-08D	Explosives, Metals
	10/09/08	ASR2.212-FP2-TW01D-08D ¹	Explosives, Metals
	10/09/08	ASR2.212-FP2-TW02-08D	Explosives, Metals
	10/09/08	ASR2.212-FP2-TW03-08D	Explosives, Metals
	10/09/08	ASR2.212-FP2-TW04-08D	Explosives, Metals
	12/05/10	MR17-MW09-10D	Explosives, Metals
	12/06/10	MR17-MW10-10D	Explosives, Metals
	12/06/10	MR17-MW11-10D	Explosives, Metals
	12/06/10	MR17-MW12-10D	Explosives, Metals
	12/06/10	MR17-MW13-10D	Explosives, Metals
	12/06/10	MR17-MW14-10D	Explosives, Metals
	12/05/10	MR17-MW15-10D	Explosives, Metals
	12/05/10	MR17-MW15D-10D ¹	Explosives, Metals
Surface Water	12/03/10	MR17-SW01-10D	Explosives, Metals
Sediment	12/03/10	MR17-SD01-10D	Explosives, Metals

¹ Duplicate of preceding sample



¹Current receptor populations may be exposed to surface soil. Future receptor populations may be exposed to surface soil and subsurface soil.

²Vapor intrusion from groundwater into indoor air evaluated for industrial worker and resident considered as a potentially complete future exposure scenario.

³Inhalation from groundwater during showering evaluated as a potentially complete future residential exposure scenario.

NA - Not Applicable or pathway is incomplete

X - Potentially complete exposure pathways

FIGURE 5-1
Conceptual Site Model for HHRA
UXO-17
MCB Camp Lejeune, North Carolina

Ecological Risk Screening

The ERS evaluated samples collected during the Phase I and Phase II investigations (2008 and 2010). Additional groundwater collected during the Phase III investigation (July 2011) were evaluated separately as an addendum to the ERS (see Section 6.5).

6.1 Site Ecological Setting and Available Data

The land cover at Site UXO-17 is a combination of early succession mixed pine-hardwood forest and open field. A small pond approximately 20 feet wide and 1 foot deep is located in the south-central area of the site. Groundwater occurs between 1 and 2 feet bgs and generally flows northwest towards Wallace Creek and the New River. The ecological checklist in **Appendix K** identifies the terrestrial and aquatic habitats onsite.

Nine surface soil samples (and one duplicate) from 0 to 2 bgs, two subsurface samples (and one duplicate) from 0 to 5 feet bgs, and four groundwater samples (and one duplicate) were collected from the 4-acre portion of the site in 2008. An additional 28 surface soil samples (and 3 duplicates), 9 subsurface soil samples, 7 groundwater samples (and 1 duplicate), and 1 surface water and sediment sample were collected from the 12-acre portion in 2010. All samples were analyzed for SVOCs (2,4-dinitrotoluene, 2,6-dinitrotoluene, and nitrobenzene only), metals, and explosives. Dissolved concentrations of metals in groundwater and surface water were also available.

In 2011, during intrusive investigation of anomalies in the Phase I area, a leaking drum, Drum #2, was discovered. When the drum was sampled, it was found that most of the free liquid had evaporated, but concentrations of metals, VOCs, and SVOCs were detected in the remaining solids. As a result, the shallow groundwater was sampled in the vicinity of the former location of Drum #2 as part of the Phase III investigation. The results are discussed qualitatively in **Section 6.5**.

6.2 Screening Methodology

For each medium (surface soil, subsurface soil, groundwater, surface water, and sediment), the maximum and arithmetic mean concentrations were calculated and Ecological Screening Values (ESVs) intended to be protective of ecological receptors were identified. HQs were calculated by dividing the exposure concentrations by the ESVs. It should be noted that ESVs for metals in water are generally based on dissolved concentrations and comparing them to total metals concentrations is conservative and may overestimate risk.

For soil, the EPA Ecological Soil Screening Levels (EcoSSL) (EPA, 2009a) were preferentially selected over Region 4 values (EPA, 2001). When no EcoSSL was available for a constituent, the Region 4 value was selected.

A selection hierarchy was also applied to surface water and groundwater. The NRWQC were preferentially selected over the Region 4 values (EPA, 2009b). However, when no NRWQC value was available for a constituent, the Region 4 value was selected as the ESV for that constituent. Because groundwater flows north to northwest toward Wallace Creek, which discharges to the New River, groundwater data were screened against marine ESVs. The surface water sample was collected from a freshwater pond onsite, so the surface water data were screened against freshwater ESVs.

For sediment, EPA Region 4 values were used.

When an ESV value was not available for a detected analyte, a supplemental screening value from published literature was used, as available.

A base background study was conducted at MCB Camp Lejeune in June and July 2000 (Baker Environmental, Inc., 2001). As part of the ecological risk screening, surface soil, subsurface soil, and groundwater background concentrations were compared to site-specific media concentrations. Additional lines of evidence in the evaluation included the frequency of detection, frequency of exceedance, magnitude of exceedance, and identification of potential laboratory contaminants.

6.3 Phase I and Phase II Screening Results

This section addresses constituents that were detected and had available ESVs based on the selection hierarchy discussed above. Non-detected constituents are not expected to pose a risk to ecological receptors. Table 1 of **Appendix K** presents the surface soil screen, Table 2 of **Appendix K** presents the subsurface soil screen, Table 3 of **Appendix K** presents the groundwater screen, Table 4 of **Appendix K** presents the surface water screen, and Table 5 of **Appendix K** presents the sediment screen.

6.3.1 Surface Soil

Of the detected analytes in surface soil with available ESVs or supplemental screening values, one explosive and six metals had maximum-based HQs greater than 1.0. Aluminum, iron, lead, selenium, and vanadium had HQs greater than 1.0 but were consistent with background. Cadmium had a slightly elevated maximum-based HQ (HQ=4.17), but only 3 of the 37 samples exceeded the ESV. Additionally, the mean-based HQ for cadmium was less than 1.0. The explosive 2,4,6-trinitrotoluene had a low magnitude of exceedance (HQ = 2.15) based on a supplemental screening value. The explosive 3-nitrotoluene was also detected but only in 1 of 37 samples. Consequently, analytes in surface soils are not expected to pose significant risk to ecological receptors.

6.3.2 Subsurface Soil

Aluminum, iron, selenium, and vanadium had maximum-based HQs greater than 1.0. Selenium concentrations exceeded the ESV in only 1 of 11 samples with a low magnitude of exceedance (HQ = 1.27). The concentrations of remaining constituents were consistent with background concentrations. As a result, analytes in subsurface are not expected to pose significant risk to ecological receptors.

6.3.3 Groundwater

Aluminum, barium, iron, manganese, and vanadium were detected in both the total and filtered samples but were consistent with background concentrations. Beryllium and cobalt were detected in the total sample but not in the filtered sample. The remaining constituents were either not detected or had HQs of less than 1.0. As a result, none of the constituents in groundwater are likely to pose a significant risk to ecological receptors.

6.3.4 Surface Water

Of the analytes with available ESVs or supplemental screening values, aluminum (total) and cadmium (total) were the only analytes with a maximum-based HQ greater than 1.0. Both constituents had low magnitudes of exceedance (HQs of less than 2) and were not detected in the filtered sample. Consequently, none of the constituents in surface water are likely to pose a significant risk to ecological receptors.

6.3.5 Sediment

Beryllium and perchlorate were the only constituents detected without an available sediment ESV or supplemental screening value identified. However, both constituents had HQs of less than 1.0 in both the site surface soils and surface water samples. Consequently, risk from these analytes in sediment is considered negligible. The remaining constituents were either not detected or had maximum-based HQs of less than one. Therefore, none of the constituents in sediment are likely to pose a significant risk to ecological receptors.

6.4 Phase III ERS Addendum

Eight groundwater samples (plus 1 duplicate) were collected in the vicinity of Drum #2 in July 2011. The samples were analyzed for VOCs and SVOCs. Carbon disulfide and toluene were the only analytes detected and were each detected in only one of the eight samples. The detected concentration of toluene (2 µg/L) was less than the marine ESV (37 µg/L). An ESV was not available for carbon disulfide; however, the concentration of carbon disulfide (2 µg/L) was less than the freshwater ecological screening benchmark (105 µg/L) published by TCEQ (2006). Consequently, exposure to groundwater via discharge to nearby surface water bodies does not pose significant risk to ecological receptors.

6.5 Summary

Based on the available data, no significant risks to populations of ecological receptors were identified within the UXO-17 Site.

Conclusions and Recommendations

This section provides the conclusions and recommendations based on the findings of the PA/SI.

7.1 Conclusions

7.1.1 DGM and Intrusive Investigation

Approximately 31.5 percent of Site UXO-17 was surveyed (100 percent of the 4-acre Phase I investigation area and 9 percent the 12-acre Phase II investigation area) yielding a total of 1,992 geophysical anomalies and 21 SRAs potentially representing subsurface MEC. Intrusive investigation all 1,992 of these anomalies and 21 SRAs resulted in the identification of one MEC and 279 MPPEH items. The MEC item, a ¼ lb Charge Supplementary, TNT, for Artillery Projectile, was discovered at a depth of 3 feet bgs and was determined to be DMM associated with Site UXO-17's historical use as a firing position. Other MPPEH was consistent with the site's use for training, with the majority of items found within the first foot bgs. Other than DMM, the firing position and surrounding training area were not determined to be a source of MEC.

Based on the estimated 263,500 pounds of other debris items (concrete, metal drums, and scrap metal) encountered, it is likely that portions of the site were used for disposal.

7.1.2 Environmental Investigation

The PA/SI involved the site-wide collection of samples of various environmental media (surface soil, subsurface soil, sediment, surface water, and groundwater) during the Phase I and Phase II investigations. Additional groundwater samples were collected and analyzed for VOCs and SVOCs during the Phase III investigation to identify and delineate any potential impacts to groundwater by Drum #2, which had leaked into site soils. A summary of the detected target analytes in all environmental samples that exceeded two times the mean MCB CamLej background concentration (available for metals only for soil and groundwater) and one or more of the regulatory screening criteria is provided below.

Surface Soil

Arsenic, cadmium, chromium, cobalt, iron, manganese, and selenium were the only target analytes detected in surface soil that exceeded exceeded two times the mean MCB CamLej background concentration and one or more of the regulatory screening criteria.

Subsurface Soil

Aluminum, arsenic, chromium, iron, and selenium were the only target analytes detected in subsurface soil that exceeded two times the mean MCB CamLej background concentration and one or more of the regulatory screening criteria.

Sediment

Three metals (aluminum, arsenic, and chromium) were the only target analytes that exceeded one or more of the regulatory screening criteria.

Surface Water

Perchlorate was the only target analyte that exceeded the regulatory screening criteria.

Groundwater

Chromium and cobalt were the only target analytes that exceeded two times the mean MCB CamLej background concentration and one or more of the regulatory screening criteria.

7.1.3 Human Health and Ecological Risk Screenings

The risk screening results indicated that exposure to Site UXO-17 soil, sediment, surface water, and groundwater would not result in unacceptable human health or ecological risks.

7.2 Recommendations

No additional environmental or MEC investigation is recommended at Site UXO-17, Former Firing Position 2, based on the following:

- No unacceptable human health or ecological risks were identified from exposure to site media
- Intrusive anomaly investigations were completed over 100% of the 4-acre firing position and the risk of contact with MEC was significantly reduced
- Intrusive anomaly investigations were completed over 9% of the surrounding 12-acre area and no MEC items were encountered.
- It is anticipated that the site will be used as an above grade expansion area for the Base landfill, potentially covering any remaining subsurface debris.

Prior to MILCON proceeding at the site, it is recommended that all site personnel conducting subsurface/intrusive activities receive "3R" munitions awareness training for recognizing, retreating, and reporting potential MEC hazards. It is also recommended that on-call construction support be provided from MCB CamLej Explosive Ordnance Disposal personnel or a qualified UXO contractor for inspection and disposal of suspected MEC/MPPEH that may be unearthed.

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Firing Position 2 (ASR #2.12), and UXO-21 - Former D-Area Gas Chamber (2D MAR DIV) (ASR #2.204), Marine Corps Base Camp Lejeune, Jacksonville, North Carolina. June.

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Appendix A

Archives Search Report

Archival Records Search Report Former Firing Position 2

**Marine Corps Base Camp Lejeune
Jacksonville, North Carolina**

Task Order 009

July 2008

Prepared for

**Department of the Navy
Naval Facilities Engineering Command
Atlantic**

Under the

**Multi-Media
Contract N62470-07-D-0501**

Prepared by



CH2MHILL

Charlotte, North Carolina

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Attachment A	Resource Review Summary
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Acronyms and Abbreviations

ASR	Archives Search Report
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CTO	Contract Task Order
DGM	Digital Geophysical Mapping
MC	Munitions Constituents
MCB	Marine Corps Base
MEC	Munitions and Explosives of Concern
mm	millimeter
MRP	Munitions Response Program
NARA	National Archives and Records Administration
USACE	United States Army Corps of Engineers
UXO	Unexploded Ordnance
WWII	World War II

SECTION 1

Introduction, Purpose, and Scope

Marine Corps Base (MCB) Camp Lejeune is in the process of investigating closed ranges at the Base following the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) investigation process. Munitions response program (MRP) construction support activities included under Contract #, Task Order (TO)-09 will be conducted at the Firing Position 2.

The results of the environmental investigation will determine if any impacts to soil and groundwater have occurred at Firing Position 2 due to past range activities. To support site investigation effort, this archival records search report has been prepared to provide a narrative of the historical activities at Firing Position 2 that may have resulted in environmental contamination with MEC.

The archival records search report is an investigative review of existing information about the site and its surrounding area, with an emphasis on obtaining information from personnel and historical resources that might indicate a potentially hazardous release to the environment. The scope of the report includes:

- A review of existing information about the site (including MCB Camp Lejeune maps, drawings, and reports, and interviews with MCB Camp Lejeune personnel).
- Collection of additional information about the site.

A complete listing of resources identified and investigated for this report is provided in Attachment 1. Attachment 1 also includes details concerning the reviews of the historical information from the Marine Corps Library at Quantico, National Archives and Records Administration (NARA) map and text files, and MCB Camp Lejeune base files.

Site Information

2.1 Ownership and Operational History

2.1.1 MCB Camp Lejeune Ownership History

The history of the land now occupied by MCB Camp Lejeune is documented primarily through land records and maps. Following the start of World War II (WWII), the War Department began purchasing tracts of land in 1941 from local residents to meet the need for an East Coast amphibious training facility. Prior to the Marines occupation, the land had been occupied by white and African-American communities and farms since the Colonial era. The land contained plantation houses, cabins, farm buildings, tobacco barns, stores, and various cemeteries (Global Security Website, 2007).

The initial land transferred to the government was acquired in 14 different transactions between April and October 1941 and totaled 173.8 square miles or 111,155 acres, of which there were 85,155 land acres and about 26,000 acres under water (Loftfield, 1981, Louis Berger Group, 2002). The individual tracts of land were grouped into various 'Areas' for consolidation.

2.1.2 Firing Position 2

Firing Position 2 was identified as Archives Search Report (ASR) Site 2.212, Firing Position 2 in the *Final Range Identification and Preliminary Assessment* (USACE, 2001). ASR 2.212 also includes other gun position sites at MCB Camp Lejeune. The site is located east of Piney Green Road and north of the current landfill at MCB Camp Lejeune at base coordinates 876-414.

An interview with a former Range Control Officer (1983 to 1985) indicated that the Firing Position 2 may have been established in the 1950s and was used through at least 1985 for the firing of 105 mm and 155 mm howitzers. A howitzer is a type of artillery that is characterized by a relatively short barrel and the use of comparatively small explosive charges to propel projectiles at trajectories with a steep angle of descent (see **Figures A-1 through A-2**). The munitions used at this site may have included 4.2-inch mortar, 120 millimeter (mm) mortar, 105 mm and 155 mm howitzers, a 175 mm gun, and an 8-inch howitzer. Munitions from this site were fired into the G-10 Impact Area. The interview also revealed that unused propellant would have been burnt on the ground at this site (Redmond, 2007).

An interview with the Base Safety specialist indicated that the Firing Position 2 was established as a training ground. A howitzer was also positioned at this site and fired 105mm and 155mm ammunition into the G-10 Impact Area. No live ammunition was fired at this site during training, only practice rounds. As a result of the historical usage and type of training conducted at the site, there should be no ground unexploded ordnance (UXO);

although, ammunition packaging, blanks, range residue, barbwire, and buried garbage may be present (Richardson, 2007).

SECTION 3

References

Global Security Website, "Camp Lejeune",
<http://www.globalsecurity.org/military/facility/camp-lejeune.htm>. Accessed May 29, 2007.

Loftfield, Thomas C., 1981. Principal Investigator, University of North Carolina, Wilmington, *Archeological and Historical Survey of USMC Base, Camp Lejeune*, Naval Facilities Engineering Command Norfolk, Coastal Zone Resource Corp, Vol II, Contract # N62470-79-C-4273, August 1981.

Louis Berger Group Inc., 2002. *Semper Fidelis: A Brief History of Onslow County, North Carolina and MCB, Camp Lejeune, 2002*, U.S.M.C., Lt. Col Lynn J. Kimball (USMC, Ret.), consulting historian.

Redmond, 2007. Personal Communication with Ben Redmond, Former Camp Lejeune Range Control Officer. November 14, 2007.

Richardson, 2007. Personal Communication with Duane Richardson, Camp Lejeune Range Safety Specialist. November 8, 2007.

United States Army Corps of Engineers (USACE), 2001. St. Louis District. *Final Range Identification and Preliminary Range Assessment*, Marine Corps Base Camp Lejeune, Onslow, North Carolina, December 2001.



Figure A-1
105 mm Howitzer
Firing Position 2
Camp Lejeune, NC



155 mm



105 mm

Figure A-1
105 mm and 155mm Howitzer Projectiles
Firing Position 2
Camp Lejeune, NC

Resource Review Summary

The following table provides a summary of the specific references identified for review, interview, or contact for the archival report.

Resource	Actions Completed
Quantico, Virginia, Marine Corps Library	Reviewed all available file folders related to Camp Lejeune – No relevant files to copy.
Gray Research Center	Reviewed all available file photos related to Camp Lejeune – No relevant photos to copy.
US National Archives (NARA II) Historical Files	Reviewed text and drawing files from Text Division. Made copies of relevant files.
Barry Zirby/National Archives Text File	See US National Archives Files Review
Camp Lejeune Technical Records files	Reviewed and copied all relevant documents related to historical land use for each site.

Camp Lejeune Personnel	
Bob Lowder/Environmental	Contacted and interviewed
Linda Futrell/ Real Estate Expert	Contacted and interviewed
Anna Watts/ Technical Records	Contacted and interviewed
Carl Baker/ Technical Records	Contacted and interviewed
Duane Richardson/ Base Range Safety Officer	Contacted and interviewed
Ben Redmond/Former Range Control Officer (1983 through 1985)	Contacted and interviewed

Marine Corp Library Review

Text Division

Contact: Annette Amerman

Site Visit: November 1, 2007

File review at Marine Corps Base, Quantico, Virginia, Gray Research Center, Marine Corps Archives and Special Collections.

No pertinent documents were obtained from the file review.

National Archives and Records Administration Review

Text Division

Contact: Mr. Barry Zirby, 301-713-7250 x285

Site visits on November 5 and 6, 2007

Reviewed 17 boxes of files associated with the Marine Corps, 1939-1950

- Record Group 127 (USMC), Office of the Commandant, General Correspondence, January 1939-June 1950, 1275/70-800 (10/45-1/47) to 1275/70-727 (1/44-12/47), Box 218.
- Record Group 127 (USMC), Office of the Commandant, General Correspondence, January 1939-June 1950, 1275/70-800 (10/44-1/45) to 1275/70-800 (7/45-9/45), Box 219.
- Record Group 127 (USMC), Office of the Commandant, General Correspondence, January 1939-June 1950, 2000-10 (1/48-12/48) to 2000-10 (5/24-12/36), Box 1201.
- Record Group 127 (USMC), Office of the Commandant, General Correspondence, January 1939-June 1950, 2000-10 (6/45-4/46) to 2000-10 (5/44), Box 1202.
- Record Group 127 (USMC), Office of the Commandant, General Correspondence, January 1939-June 1950, 2000-20 (1/49-10/49) to 2000-10 (1/45-6/45), Box 1203.
- Record Group 127 (USMC), Office of the Commandant, General Correspondence, January 1939-June 1950, 2000-20 (1/44-6/47) to 2000-20 (5/48-12/48), Box 1204.
- Record Group 127 (USMC), Office of the Commandant, General Correspondence, January 1939-June 1950, 2000-20-5 (6/46-12/47) to 2000-20 (6/43), Box 1205.
- Record Group 127 (USMC), Office of the Commandant, General Correspondence, January 1939-June 1950, 2000-20-10 (7/48-10/47) to 2000-20-5 (4/45-6/46), Box 1206.
- Record Group 127 (USMC), Office of the Commandant, General Correspondence, January 1939-June 1950, 2000-20-10 (7/41-11/42) to 2000-20-10 (1/45-6/45), Box 1207.
- Record Group 127 (USMC), Office of the Commandant, General Correspondence, January 1939-June 1950, 2000-20-10 (7/39-2/40) to 2000-20-10 (2/40-6/41), Box 1208.
- Record Group 127 (USMC), Office of the Commandant, General Correspondence, January 1939-June 1950, 2000-20-20 (1/48-12/48) to 2000-20-15 (1/49-6/50), Box 1209.
- Record Group 127 (USMC), Office of the Commandant, General Correspondence, January 1939-June 1950, 2000-20-20 (1/44-11/46) to 2000-20-20 (11/46-12/47), Box 1210.
- Record Group 127 (USMC), Office of the Commandant, General Correspondence, January 1939-June 1950, 2295-10 Brooklyn to 2285-10 Camp Lejuene, Box 1570.
- Record Group 127 (USMC), Office of the Commandant, General Correspondence, January 1939-June 1950, 2295-10 Camp Lejuene to 2285-10 Camp Lejuene, Box 1571.
- Record Group 127 (USMC), Office of the Commandant, General Correspondence, January 1939-June 1950, 2295-10 Camp Lejuene to 2285-10 Camp Lejuene, Box 1572.

- Record Group 127 (USMC), Quartermaster, General Correspondence, January 1940, 215-4 to 215-6, Box 145.
- Record Group 127 (USMC), Correspondence Files of the Office of the Commandant, Headquarters Support Division Central Files Section, 1950-1958, Box 172.

The boxes contained information primarily related to weapons test results, weapons cost distribution, weapons training classes, weapon specifications, and cleaning and maintenance. The material was not specific to Camp Lejeune and included information for several MC bases.

List of Documents Obtained from National Archives

No pertinent documents were obtained from the file review.

MCB Camp Lejeune Base Site Visit and Records Review

Base Contact: Mr. Bob Lowder, Environmental Management Division, 910-451-9607

File reviews of records in the base Technical Records office were conducted during the site visit. Additionally, interviews were conducted with Bob Lowder/Environmental Manager, Anna Watts/Technical Records, Carl Baker/Technical Records, and Duane Richardson/EOD Base Range Safety Officer.

List of Documents Obtained from Camp Lejeune

Base Real Estate Office

- "Proposed Borrow Sites, Vicinity Map", 1992. NAVFAC Drawing 14854, Sheet 1 of 4.
- "Proposed Borrow Area, Camp Geiger", 1992. NAVFAC Drawing 14855, Sheet 2 of 4.

Base Library

- Louis Berger Group, Inc. Under USCOE, Wilmington District Contract DACWS4-99-C-0004, *Semper Fidelis: A Brief History of Onslow County, North Carolina and MCB, Camp Lejeune*, 2002, United States Marine Corps, Lt. Col Lynn J. Kimball (USMC, Retired) Consulting Historian.
- Lotfield, Thomas, C. Principal Investigator. UNCW, August 1981. *Archeological and Historical Survey of USMC Base, Camp Lejeune; Naval Facilities Engineering Command Norfolk, Coastal Zone Resource Corp., Vol. II, Contract No. N62470-79-C-4273.*

Environmental Office

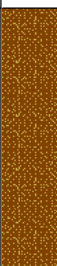
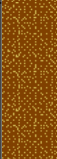




No pertinent documents were obtained from the file review.

Appendix B
Soil Boring Logs, Well Completion Diagrams,
and Well Development Sheets

**CH2MHILL****Boring Number: ASR2.212.FP2-IS01**

Sheet: 1 of 1







Client: NAVFAC**Project:** TO-09/Landfill Firing Position 2**Location:** MCB Camp Lejeune**Project Number:** 363366**Driller:** PARRATT WOLFF**Drilling Method:** Power Probe 9600T**Sampling Method:** 4 ft. Macrocore**Logged by:** E. Must/RDU**Start/Finish Date:** 10/7/2008 1320/1350

Depth (ft)	Sample Information				Soil Log	Soil Description	Depth / Elev (ft)	Comments
	Sample #	Sample Type	Recovery (%)	SPT (6"-6"-6")				
0						Ground Surface	0	
	1	MC	87	NA		Sand (SP) Brown/tan, fine grained, poorly graded, loose, dry to moist	0	Screened with MiniRae 2000 PID
								PID: 0.0 ppm above macrocore
							-4	Collected sample ASR2.212.FP2-IS01-3-5 and ASR2.212.FP2-IS01D-3-5 (3 to 5 ft bgs)
5	2	MC	87	NA		Sand (SP) Brown/tan, fine grained, poorly graded, loose, moist to wet	4	
							-7	PID: 0.0 ppm
							7	
						Silty Sand (SM) Dark brown, fine grained, loose, saturated	-8	
							8	
						Silty Sand (SM) Dark brown, fine grained, loose, saturated	-11	
10	3	MC	100	NA			11	
						Silty Sand (SM) Dark brown, fine grained, loose, saturated, trace clay	-12	
							12	
						Sand (SP) Dark brown/tan/light green grey, very fine grained, poorly graded, loose, wet, laminated dark brown/tan from 11 to 11.5 ft bgs	-12	
						End of Log	12	
15								Installed temporary well ASR2.212.FP2-TW01 set to 14 ft bgs, screened from 4 to 14 ft bgs
20								

**CH2MHILL****Boring Number: ASR2.212.FP2-IS02**

Sheet: 1 of 1

Client: NAVFAC**Project:** TO-09/Landfill Firing Position 2**Location:** MCB Camp Lejeune**Project Number:** 363366**Driller:** PARRATT WOLFF**Drilling Method:** Power Probe 9600T**Sampling Method:** 4 ft. Macrocore**Logged by:** E. Must/RDU**Start/Finish Date:** 10/7/2008 1120/1200

Depth (ft)	Sample Information				Soil Log	Soil Description	Depth / Elev (ft)	Comments
	Sample #	Sample Type	Recovery (%)	SPT (6"-6'-6")				
0						Ground Surface	0	
	1	MC	87	NA		Sand (SP) Tan/brown, very fine grained, poorly graded, loose, dry to moist	0	Screened with MiniRae 2000 PID
						Silty Sand (SM) Dark grey, black, very fine grained, loose, moist, trace organics	-2 2	PID: 0.0 ppm above macrocore
						Sand (SP) Tan/brown, very fine grained, poorly graded, loose, dry to moist		Collected sample ASR2.212.FP2-IS02-4-6 (4 to 6 ft bgs)
5	2	MC	87	NA		Sandy Clay (CL) Grey, firm, moist, some very fine grained sand		
						Clayey Sand (SC) Grey, very fine grained, medium dense, some clay, moist		Liner stuck due to wet sand PID: 0.0 ppm
						Sand (SP) Tan/brown, fine grained, poorly graded, loose, moist, wet at 6 ft bgs, trace clay at 6.75 to 7 ft bgs	-8 8	
						End of Log		
10								
15								Installed temporary well ASR2.212.FP2-TW02 set to 14 ft bgs, screened from 4 to 14 ft bgs
20								



CH2MHILL

Boring Number: ASR2.212.FP2-IS03

Sheet: 1 of 1

Client: NAVFAC

Project: TO-09/Landfill Firing Position 2

Location: MCB Camp Lejeune

Project Number: 363366

Driller: PARRATT WOLFF

Drilling Method: Power Probe 9600T

Sampling Method: 4 ft. Macrocore

Logged by: E. Must/RDU

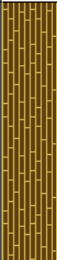
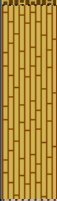


Start/Finish Date: 10/7/2008 1600/1625

Depth (ft)	Sample Information				Soil Log	Soil Description	Depth / Elev (ft)	Comments
	Sample #	Sample Type	Recovery (%)	SPT (6"-6"-6")				
0						Ground Surface	0	
	1	MC	87	NA		Silty Sand (SM) Tan/grey/brown, very fine grained, medium dense, dry to moist, trace organics 2 to 2.5 ft bgs	0	Screened with MiniRae 2000 PID
							-4	PID: 0.0 ppm above macrocore
5	2	MC	100	NA		Silty Sand (SM) Tan/grey/brown, very fine grained, medium dense, dry to moist	4	
						Interbedded Silty Sand (SM) and Sand (SP) Tan/grey/brown, very fine grained, medium dense, dry to moist silty sand, and light grey, very fine grained, poorly graded, loose, moist sand beds 0.5 to 2 inches thick	-6	Collected sample ASR2.212.FP2-IS03-5-7 (5 to 7 ft bgs) MS/MSD
							6	PID: 0.0 ppm
						Sand (SP) Light grey, fine grained to very fine grained, loose, poorly graded, wet to saturated	-8	
10	3	MC	25	NA			8	Liner stuck in sampler
							-12	
						End of Log	12	
15								Installed temporary well ASR2.212.FP2-TW03 set to 15 ft bgs, screened from 5 to 15 ft bgs
20								

**CH2MHILL****Boring Number: ASR2.212.FP2-IS04**

Sheet: 1 of 1

Client: NAVFAC**Project:** TO-09/Landfill Firing Position 2**Location:** MCB Camp Lejeune**Project Number:** 363366**Driller:** PARRATT WOLFF**Drilling Method:** Power Probe 9600T**Sampling Method:** 4 ft. Macrocore**Logged by:** E. Must/RDU**Start/Finish Date:** 10/8/2008 0730/0800

Depth (ft)	Sample Information				Soil Log	Soil Description	Depth / Elev (ft)	Comments
	Sample #	Sample Type	Recovery (%)	SPT (6"-6'-6")				
0						Ground Surface	0	
	1	MC	100	NA		Silty Sand (SM) Dark brown to tan, fine grained, loose to medium dense, moist, trace organics from 0 to 2 ft bgs	0	Screened with MiniRae 2000 PID PID: 0.0 ppm above macrocore
							-4	
							4	
5	2	MC	100	NA		Silty Sand (SM) Dark brown to tan, fine grained, loose to medium dense, moist	-5	
						Interbedded Silty Sand (SM) and Sand (SP) Dark brown to tan, fine grained, loose to medium dense, moist silty sand, Light tan/grey, fine to very fine grained, poorly graded, moist to wet sand, beds 0.05 to 0.3 ft thick, some orange laminations in sand	5	PID: 0.0 ppm
							-8	Collected sample ASR2.212.FP2-IS04-7-9 (7 to 9 ft bgs)
							8	
10	3	MC	100	NA		Sand (SP) Light grey and orange, fine to very fine grained, poorly graded, wet at 10 ft bgs		PID: 0.0 ppm
							-12	
							12	
15	4	MC	100	NA		Sand (SP) Light grey and orange, fine to very fine grained, poorly graded, saturated		PID: 0.0 ppm
							-16	
						End of Log	16	Installed temporary well ASR2.212.FP2-TW04 set to 16 ft bgs, screened from 6 to 16 ft bgs
20								



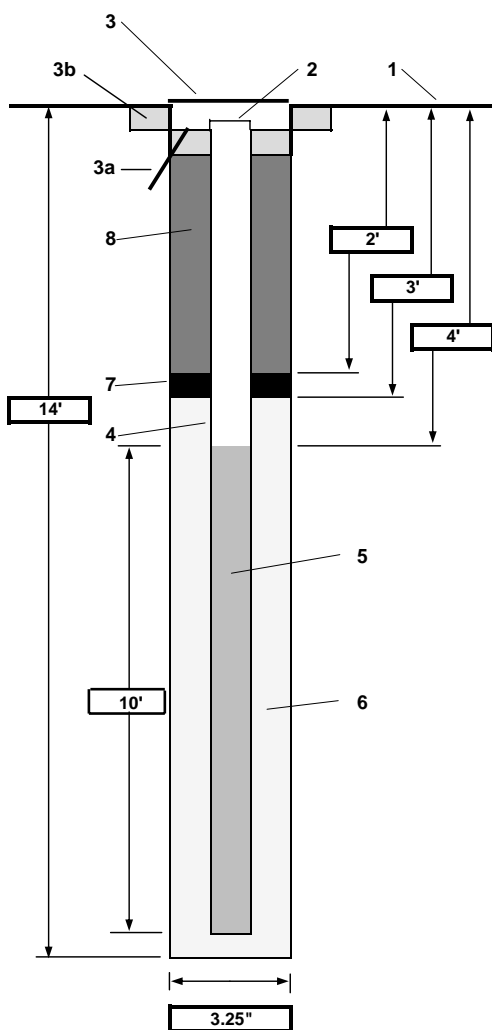
PROJECT NUMBER 363366	WELL NUMBER ASR2.212.FP2-TW01	SHEET 1 OF 1
WELL COMPLETION DIAGRAM		

PROJECT : TO-09 Landfill Firing Position 2 LOCATION : MCB Camp Lejeune

DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : DPT/ Power Probe 9600T

WATER LEVELS : 6.05' BTOC START : 10/7/2008 1355 END : 10/7/08 1445 LOGGER : E. Must/RDU



1- Ground elevation at well	21.35' AMSL
2- Top of casing elevation	21.71' AMSL
3- Wellhead protection cover type	Locking Cap
a) drain tube?	None
b) concrete pad dimensions	None
4- Dia./type of well casing	1" Schedule 40 PVC
5- Type/slot size of screen	0.01" Slot Schedule 40 PVC
6- Type screen filter	Prepack Screen and # 1 Filter Sand
a) Quantity used	1/4 bag
7- Type of seal	3/8" Bentonite Chips
a) Quantity used	1/4 bag
8- Grout	
a) Grout mix used	NA
b) Method of placement	NA
c) Vol. of well casing grout	NA
Development method	Surge and Purge (Peristaltic Pump)
Development time	2.5 hrs
Estimated purge volume	8 gallons

Comments: BTOC = below top of casing; AMSL = above mean sea level; NA = Not Applicable; NM = Not measured



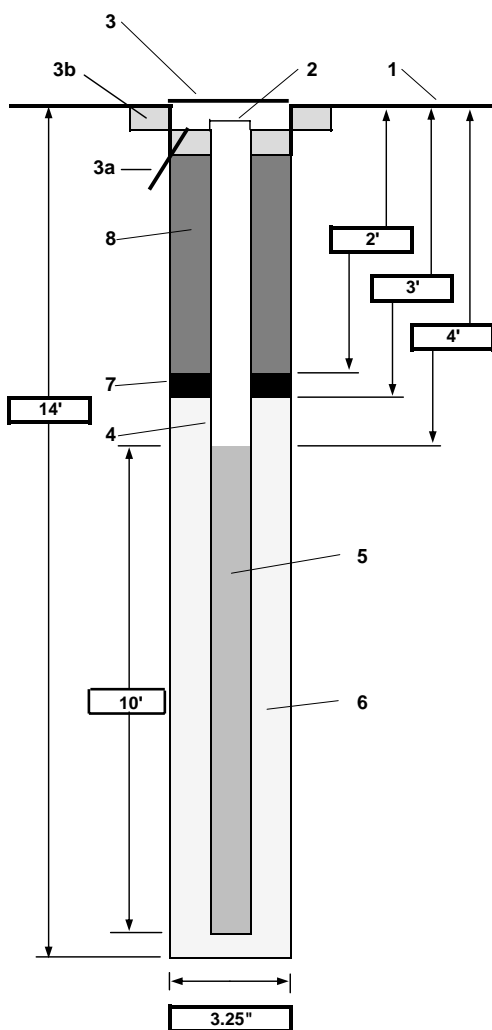
PROJECT NUMBER 363366	WELL NUMBER ASR2.212.FP2-TW02	SHEET 1 OF 1
WELL COMPLETION DIAGRAM		

PROJECT : TO-09 Landfill Firing Position 2 LOCATION : MCB Camp Lejeune

DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : DPT/ Power Probe 9600T

WATER LEVELS : 5.51' BTOC START : 10/7/2008 1205 END : 10/7/08 1305 LOGGER : E. Must/RDU



1- Ground elevation at well	22.3' AMSL
2- Top of casing elevation	22.66' AMSL
3- Wellhead protection cover type	Locking Cap
a) drain tube?	None
b) concrete pad dimensions	None
4- Dia./type of well casing	1" Schedule 40 PVC
5- Type/slot size of screen	0.01" Slot Schedule 40 PVC
6- Type screen filter	Prepack Screen and # 1 Filter Sand
a) Quantity used	NM
7- Type of seal	3/8" Bentonite Chips
a) Quantity used	NM
8- Grout	
a) Grout mix used	NA
b) Method of placement	NA
c) Vol. of well casing grout	NA
Development method	Surge and Purge (Peristaltic Pump)
Development time	50 min
Estimated purge volume	4 gallons

Comments: BTOC = below top of casing; AMSL = above mean sea level; NA = Not Applicable; NM = Not measured



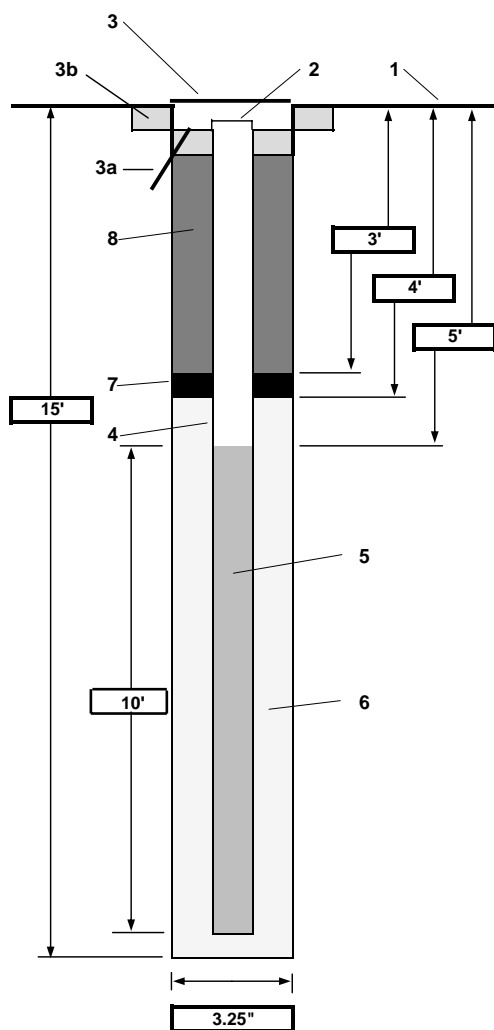
PROJECT NUMBER 363366	WELL NUMBER ASR2.212.FP2-TW03	SHEET 1 OF 1
WELL COMPLETION DIAGRAM		

PROJECT : TO-09 Landfill Firing Position 2 LOCATION : MCB Camp Lejeune

DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : DPT/ Power Probe 9600T

WATER LEVELS : 9.48' BTOC START : 10/7/2008 1630 END : 10/7/08 1740 LOGGER : E. Must/RDU



1- Ground elevation at well	23.05' AMSL
2- Top of casing elevation	23.37' AMSL
3- Wellhead protection cover type	Locking Cap
a) drain tube?	None
b) concrete pad dimensions	None
4- Dia./type of well casing	1" Schedule 40 PVC
5- Type/slot size of screen	0.01" Slot Schedule 40 PVC
6- Type screen filter	Prepack Screen and # 1 Filter Sand
a) Quantity used	1/4 bag
7- Type of seal	3/8" Bentonite Chips
a) Quantity used	1/4 bag
8- Grout	NA
a) Grout mix used	NA
b) Method of placement	NA
c) Vol. of well casing grout	NA
Development method	Surge and Purge (Peristaltic Pump)
Development time	1 hr, 13 mins
Estimated purge volume	3.85 gallons

Comments: BTOC = below top of casing; AMSL = above mean sea level; NA = Not Applicable; NM = Not measured



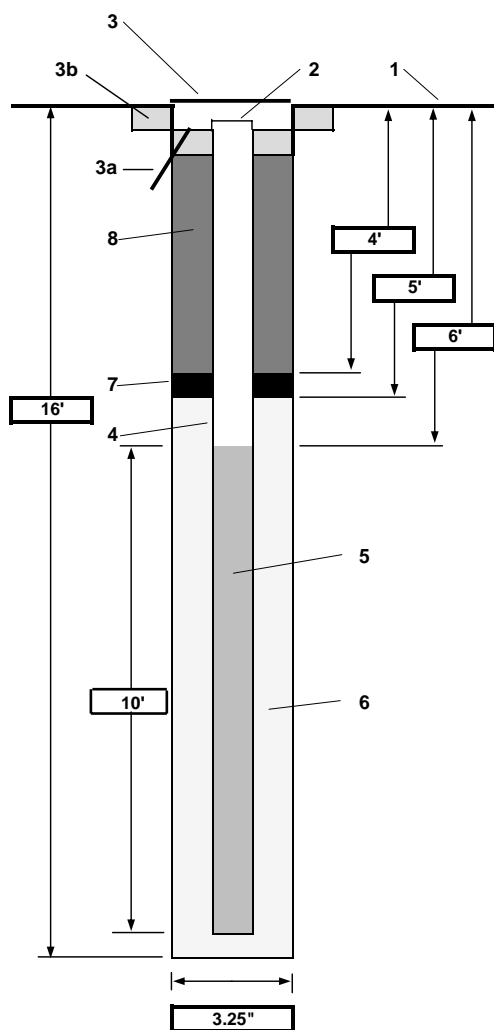
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WELL COMPLETION DIAGRAM		

PROJECT : TO-09 Landfill Firing Position 2 LOCATION : MCB Camp Lejeune

DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : DPT/ Power Probe 9600T

WATER LEVELS : 10.67' BTOC START : 10/8/2008 0830 END : 10/8/08 0900 LOGGER : E. Must/RDU



1- Ground elevation at well	24.38' AMSL
2- Top of casing elevation	24.47' AMSL
3- Wellhead protection cover type	Locking Cap
a) drain tube?	None
b) concrete pad dimensions	None
4- Dia./type of well casing	1" Schedule 40 PVC
5- Type/slot size of screen	0.01" Slot Schedule 40 PVC
6- Type screen filter	Prepack Screen and # 1 Filter Sand
a) Quantity used	1.5 bags
7- Type of seal	3/8" Bentonite Chips
a) Quantity used	1/4 bag
8- Grout	NA
a) Grout mix used	NA
b) Method of placement	NA
c) Vol. of well casing grout	NA
Development method	Surge and Purge (Peristaltic Pump)
Development time	1 hr 20 mins
Estimated purge volume	3.75 gallons

Comments: BTOC = below top of casing; AMSL = above mean sea level; NA = Not Applicable; NM = Not measured

Boring Number: MR17-IS01

Sheet: 1 of 1

Client: NAVFAC

Project: CTO-141 Site UXO-17

Location: MCB CamLej

Project Number: 406817.SI.MS




Driller: American Environmental

Drilling Method: Direct Push

Sampling Method: Acetate Sleeves

Logged by: Mark Ost/VBO

Start/Finish Date: 12/04/2010

Depth (ft)	Sample Information				Soil Log	Soil Description	Comments
	Sample #	Sample Type	Recovery (in)	SPT (6"-6"-6")			
0						Ground Surface	Collected MR17-IS01-2-4-10D from 2 to 4 ft bgs Water level encountered at 4 ft bgs
	1	HA-1	48			Silt, ML white (7.5 yr/8/1), dry, loose	
						Silt, ML black (7.5 yr/2.5/1), dark stained	
						Sand, SP white (7.5 yr/8/1), moist, fine, loose	
						End of Log	
5							
10							
15							
20							

Boring Number: MR17-IS02

Sheet: 1 of 1

Client: NAVFAC

Project: CTO-141 Site UXO-17

Location: MCB CamLej

Project Number: 406817.SI.MS






Driller: American Environmental

Drilling Method: Direct Push

Sampling Method: Acetate Sleeves

Logged by: Mark Ost/VBO

Start/Finish Date: 12/04/2010

Depth (ft)	Sample Information				Soil Log	Soil Description	Comments
	Sample #	Sample Type	Recovery (in)	SPT (6"-6"-6")			
0						Ground Surface	
	1	HA-1	60			Organic Soil, OL gray(5yr/5/1), moist, loose	
						Silt, ML gray (5yr/5/1), moist, loose, mottled	
						Clay, CL white (7.5yr/8/1), dry, dense plastic	
						Silt, ML brown (7.5yr/5/3), dry, dense	Collected MR17-IS02-4-6-10D from 4 to 6 ft bgs
5	2	DP-1	12			Silty Sand, SM white (7.5yr/8/1)	
						End of Log	Water level encountered at 6 ft bgs
10							
15							
20							

Boring Number: MR17-IS03

Sheet: 1 of 1

Client: NAVFAC

Project: CTO-141 Site UXO-17

Location: MCB CamLej

Project Number: 406817.SI.MS



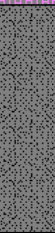
Driller: American Environmental

Drilling Method: Direct Push

Sampling Method: Acetate Sleeves

Logged by: Mark Ost/VBO

Start/Finish Date: 12/04/2010

Depth (ft)	Sample Information				Soil Log	Soil Description	Comments
	Sample #	Sample Type	Recovery (in)	SPT (6"-6"-6")			
0						Ground Surface	Collected MR17-IS03-3-5-10D from 3 to 5 ft bgs
	1	HA-1	60			Sand, SP white (10yr/8/1), dry, loose, very fine	
						Silt, ML pink gray (7.5yr/7/2), dry, loose	
						Sand, SP pink gray(7.5yr/7/2), dry, loose	Water level encountered at 5.5 ft bgs
5	2	DP-1	6			End of Log	
10							
15							
20							

Boring Number: MR17-IS04

Sheet: 1 of 1

Client: NAVFAC

Project: CTO-141 Site UXO-17

Location: MCB CamLej

Project Number: 406817.SI.MS

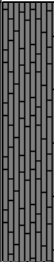

Driller: American Environmental

Drilling Method: Direct Push

Sampling Method: Acetate Sleeves

Logged by: Mark Ost/VBO

Start/Finish Date: 12/04/2010

Depth (ft)	Sample Information				Soil Log	Soil Description	Comments
	Sample #	Sample Type	Recovery (in)	SPT (6"-6"-6")			
0						Ground Surface	
1	1	HA-1	60			Silt, ML light gray (10yr/7/1), damp, loose, iron stain	Collected MR17-IS04-3-5-10D
5						Clayey Silt, ML white (10yr/8/1), loose	Water level encountered at 5 ft bgs
						End of Log	
10							
15							
20							

Boring Number: MR17-IS05

Sheet: 1 of 1

Client: NAVFAC

Project: CTO-141 Site UXO-17

Location: MCB CamLej

Project Number: 406817.SI.MS

Driller: American Environmental

Drilling Method: Direct Push

Sampling Method: Acetate Sleeves

Logged by: Mark Ost/VBO

Start/Finish Date: 12/04/2010

Depth (ft)	Sample Information				Soil Log	Soil Description	Comments
	Sample #	Sample Type	Recovery (in)	SPT (6"-6"-6")			
0						Ground Surface	Collected MR17-IS05-1-3-10D from 1 to 3 ft bgs Water level encountered at 3 ft bgs
	1	HA-1	36			Silt, ML (10yr/5/3), loose, dry	
						Sandy Silt (10yr/8/1), loose	
						End of Log	
5							
10							
15							
20							

Boring Number: MR17-IS06

Sheet: 1 of 1

Client: NAVFAC

Project: CTO-141 Site UXO-17

Location: MCB CamLej

Project Number: 406817.SI.MS



Driller: American Environmental

Drilling Method: Direct Push

Sampling Method: Acetate Sleeves

Logged by: Mark Ost/VBO

Start/Finish Date: 12/04/2010

Depth (ft)	Sample Information				Soil Log	Soil Description	Comments
	Sample #	Sample Type	Recovery (in)	SPT (6"-6"-6")			
0						Ground Surface	
	1	HA-1	24			Silt, ML (2.5yr/5/1), loose, dry, organic	
						No recovery	
5						Wood Chips	
	2	DP-1	60			Silt, ML white (10yr/8/1), loose	Collected MR17-IS06-8-10-10D from 8 to 10 ft bgs
10						End of Log	Water level encountered at 10 ft bgs
15							
20							

Boring Number: MR17-IS07

Sheet: 1 of 1

Client: NAVFAC

Project: CTO-141 Site UXO-17

Location: MCB CamLej

Project Number: 406817.SI.MS

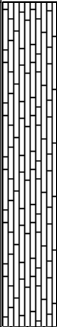

Driller: American Environmental

Drilling Method: Direct Push

Sampling Method: Acetate Sleeves

Logged by: Mark Ost/VBO

Start/Finish Date: 12/04/2010

Depth (ft)	Sample Information				Soil Log	Soil Description	Comments
	Sample #	Sample Type	Recovery (in)	SPT (6"-6"-6")			
0						Ground Surface	
1	1	HA-1	60			Silt, ML white (10yr/8/1), loose, dry damp 2.5 to 5 ft bgs	
5	2	DP-1	24			Clayey Silt, ML white (10yr/8/1)	Collected MR17-IS07-5-7-10D from 5 to 7 ft bgs
						End of Log	Water level encountered at 10 ft bgs
10							
15							
20							

Boring Number: MR17-IS08

Sheet: 1 of 1

Client: NAVFAC

Project: CTO-141 Site UXO-17

Location: MCB CamLej

Project Number: 406817.SI.MS


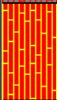



Driller: American Environmental

Drilling Method: Direct Push

Sampling Method: Acetate Sleeves

Logged by: Mark Ost/VBO

Start/Finish Date: 12/04/2010

Depth (ft)	Sample Information				Soil Log	Soil Description	Comments
	Sample #	Sample Type	Recovery (in)	SPT (6"-6"-6")			
0						Ground Surface	
	1	HA-1	60			Silt, ML red gray (2.5yr/5/1), dry, very dense	
						Silt, ML red yellow (7.5yr/6/8), dry, loose	
						Clayey Silt, ML white (10yr/8/1), medium dense, moist	
5	2	DP-1	60			Clay, CL white (7.5yr/8/1), plastic, moist	Collected MR17-IS08-6-8-10D from 6 to 8 ft bgs
						Silty Clay, CL white (10yr/8/1), medium dense, plastic	Water level encountered at 8 ft bgs
10						End of Log	
15							
20							

Boring Number: MR17-TW09

Sheet: 1 of 1

Client: NAVFAC

Project: CTO-141 Site UXO-17

Location: MCB CamLej

Project Number: 406817.SI.MS



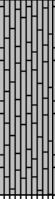

Driller: American Environmental

Drilling Method: Direct Push

Sampling Method: Acetate Sleeves

Logged by: Mark Ost/VBO

Start/Finish Date: 12/01/2010

Depth (ft)	Sample Information				Soil Log	Soil Description	Comments
	Sample #	Sample Type	Recovery (in)	SPT (6"-6"-6")			
0						Ground Surface	
	1	HA-1	60			Sand, SP white (5yr/8/1), dry, fine	Collected MR17-IS09-3-5-10D from 3 to 5 ft bgs
						Sand, SP pale brown (10yr/8/4), dark stain	
5						Sand, SP pale brown (10yr/8/2), loose, saturated	Water level encountered at 8 ft bgs
	2	DP-1	60			Silty Sand, SM light gray (10yr/7/1), loose, saturated	
10						Silty Sand, SM white (10yr/8/1), loose, saturated	
	3	DP-2	60				
15						End of Log	
20							

Boring Number: MR17-TW10

Sheet: 1 of 1

Client: NAVFAC

Project: CTO-141 Site UXO-17

Location: MCB CamLej

Project Number: 406817.SI.MS

Driller: American Environmental

Drilling Method: Direct Push

Sampling Method: Acetate Sleeves

Logged by: Mark Ost/VBO

Start/Finish Date: 12/01/2010

Depth (ft)	Sample Information				Soil Log	Soil Description	Comments
	Sample #	Sample Type	Recovery (in)	SPT (6"-6"-6")			
0						Ground Surface	
	1	HA-1	60			Sand, SP dark gray (2.5yr/4/1), dry, loose, fine	Collected MR17-IS10-3-5-10D from 3 to 5 ft bgs water level encountered at 5 ft bgs
						Sand, SP white (10yr/8/1), moist at 5 ft bgs	
5	2	DP-1	60			Sand, SP gray (10yr/5/1), loose, saturated	
						Medium Sand, SP white (10yr/8/1), loose, saturated	
10	3	DP-2	60			Sand, SP white (10yr/8/1), loose, saturated	
15						Sand, SP brown yellow (10yr/6/6), iron stain	
						End of Log	
20							

Boring Number: MR17-TW11

Sheet: 1 of 1

Client: NAVFAC

Project: CTO-141 Site UXO-17

Location: MCB CamLej

Project Number: 406817.SI.MS






Driller: American Environmental

Drilling Method: Direct Push

Sampling Method: Acetate Sleeves

Logged by: Mark Ost/VBO

Start/Finish Date: 12/02/2010

Depth (ft)	Sample Information				Soil Log	Soil Description	Comments
	Sample #	Sample Type	Recovery (in)	SPT (6"-6"-6")			
0						Ground Surface	
	1	HA-1	60			Sand, SP brown (10yr/5/3), dry, loose, fine	
						Silty Sand, SM gray (7.5yr/6/1), dry, low plasticity	
5						Sand, SP white (10yr/8/1), loose, moist	Collected MR17-IS11-4-6-10D from 4 to 6 ft bgs
	2	DP-1	60			Silty Sand, SM white (10yr/8/1), loose, moist, medium dense, low plasticity	water level encountered at 5 ft bgs
10							
	3	DP-2	60			Sand, SP pale brown (10yr/8/2), loose, saturated, iron stain	
15							
						End of Log	
20							

Boring Number: MR17-TW12

Sheet: 1 of 1

Client: NAVFAC

Project: CTO-141 Site UXO-17

Location: MCB CamLej

Project Number: 406817.SI.MS

Driller: American Environmental

Drilling Method: Direct Push

Sampling Method: Acetate Sleeves

Logged by: Mark Ost/VBO

Start/Finish Date: 12/02/2010

Depth (ft)	Sample Information				Soil Log	Soil Description	Comments
	Sample #	Sample Type	Recovery (in)	SPT (6"-6"-6")			
0						Ground Surface	
1	1	HA-1	60			Silt, ML gray (7.5yr/5/1), dry, loose dry, low plasticity from 2 to 4 ft bgs	
5						Sand, SP white (7.5yr/8/1) dry, loose	Collected MR17-IS12-5-7-10D from 5 to 7 ft bgs
2	2	DP-1	60			Silty Sand, SM white (10yr/8/1)	Water level encountered at 7 ft bgs
10						saturated and loose from 10 to 15 ft bgs	
3	3	DP-2	60				
15						End of Log	
20							

Boring Number: MR17-TW13

Sheet: 1 of 1

Client: NAVFAC

Project: CTO-141 Site UXO-17

Location: MCB CamLej

Project Number: 406817.SI.MS


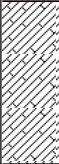
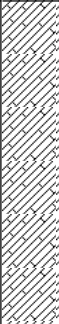

Driller: American Environmental

Drilling Method: Direct Push

Sampling Method: Acetate Sleeves

Logged by: Mark Ost/VBO

Start/Finish Date: 12/03/2010

Depth (ft)	Sample Information				Soil Log	Soil Description	Comments
	Sample #	Sample Type	Recovery (in)	SPT (6"-6"-6")			
0						Ground Surface	
1	1	HA-1	60			Silt, ML pinkish gray (5yr/6/2), dry, medium dense	
5						Silty Clay, CL white (7.5yr/8/1), dry, low plasticity	
2	2	DP-1	60			Clayey Silt, ML white (7.5yr/8/1) saturated loose	Collected MR17-IS13-5-7-10D from 5 to 7 ft bgs Water level encountered at 7 ft bgs
10						Silty Sand, SM white (10yr/8/1), saturated, loose	
3	3	DP-2	60				
15						End of Log	
20							

Boring Number: MR17-TW14

Sheet: 1 of 1

Client: NAVFAC

Project: CTO-141 Site UXO-17

Location: MCB CamLej

Project Number: 406817.SI.MS

Driller: American Environmental

Drilling Method: Direct Push

Sampling Method: Acetate Sleeves

Logged by: Mark Ost/VBO

Start/Finish Date: 12/03/2010

Depth (ft)	Sample Information				Soil Log	Soil Description	Comments
	Sample #	Sample Type	Recovery (in)	SPT (6"-6"-6")			
0						Ground Surface	
	1	HA-1	60			Sand, SP dark gray (10yr/4/1), dry, some organics	
						Silt, ML very pale brown (10yr/7/3)	
5							Water level encountered at 6 ft bgs
	2	DP-1	60				
						Sandy Silt, ML light gray (10yr/7/1) loose, Iron stain	Collected MR17-IS14-6-8-10D from 6 to 8 ft bgs
						Silty Clay, CL brown yellow (10yr/6/8) saturated, plastic	
10						Silty Sand, SM yellow (10yr/7/8), saturated, loose	
	3	DP-2	60			Sand, SP gray (2.5yr/6/1), saturated, loose	
15						End of Log	
20							

Boring Number: MR17-TW15

Sheet: 1 of 1

Client: NAVFAC

Project: CTO-141 Site UXO-17

Location: MCB CamLej

Project Number: 406817.SI.MS

Driller: American Environmental

Drilling Method: Direct Push

Sampling Method: Acetate Sleeves

Logged by: Mark Ost/VBO

Start/Finish Date: 12/02/2010

Depth (ft)	Sample Information				Soil Log	Soil Description	Comments
	Sample #	Sample Type	Recovery (in)	SPT (6"-6"-6")			
0						Ground Surface	
1	1	HA-1	60			Sand, SP pinkish gray (5yr/7/2), loose	Collected MR17-IS15-1-3-10D from 1 to 3 ft bgs Water level encountered at 3 ft bgs
5	2	DP-1	60			Sand, SP gray (2.5yr/6/1), saturated, loose	
10						Silty Sand, SM gray (2.5y/6/1), saturated, loose, low plasticity	
	3	DP-2	60			Silty Clay, CL gray black (1/4/N), black moist, high plasticity	
15						Clay, CL gray black (1/4/N), moist, high plasticity	
						End of Log	
20							



PROJECT NUMBER 418824	BORING NUMBER MKT TWIG	SHEET 1 OF 1
7.18.11		
SOIL BORING LOG		

PROJECT: CTO WE 41 LOCATION: MCB CAMLETS WYO-17
 ELEVATION: DRILLING CONTRACTOR: Probe
 DRILLING METHOD AND EQUIPMENT USED: Geoprobe 6620 DT
 WATER LEVELS: START: 1320 END: 1350 LOGGER: K. Rogers / RDU

DEPTH BELOW SURFACE (FT)				STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL (FT)	RECOVERY (IN)		6"-6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
			#/TYPE			
0					Silty sand (Sm) ^{tan} tan, dry, loose V.F grained Chunks of asphalt and concrete present	*NO RECOVERY 0-2.5
2.5	30				Dense silty sand (Ss) @ 4.5' - 4.75'	0.0 2.5
5					N. Recov 5-6 Poorly graded Sand (SP) Tan to orange, dry to moist, loose, FINE grained trace silt	0.1 5
7.5	48				7.0 - Silty Sand (Sm) - gray and tan, moist to wet, clay lenses ~1-2" thick @ 7.5', 7.75', 8.25'.	0.0 7.5
10					NO RECOVERY	0.0 10
12.5	48				11. Poorly graded Sand (SP) Lt. gray, saturated, clayey Sand lenses throughout, loose, soft, U. FINE grained	0.0 12.5 ✓
15						0.0 15

Legend

PID - Photo-ionization detector
 FID - Flame-ionization detector

End of Log well set 6-16' bgs
 T - Time



CH2MHILL

PROJECT NUMBER 418824.F1.55	BORING NUMBER MR17-TW17	SHEET 1 OF 1
SOIL BORING LOG		
7-18-11		

PROJECT: **CTOWE 41** LOCATION: **MCB CAMLEJ UXO 17**
 ELEVATION: DRILLING CONTRACTOR: **Pike**
 DRILLING METHOD AND EQUIPMENT USED: **DPT GEOPHORE G620 DT** HSA FOR WELL INSTALL
 WATER LEVELS: START: **1120** END: **1130** LOGGER: **K. Rogers**

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)		STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION	COMMENTS	
		RECOVERY (IN)			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	
		#/TYPE				
0	5	48	DP 1	Silty Sand (sm) dk brown dry, med density, Fine grained, trace wood, plastic sheeting at approx 2' bgs,		
2.5				Trace gravel + poss asphalt at 3'-3.5'	0.3	2.5
5				3.5' Silty sand (sm) Lt brown to tan, dry to moist Fine grained, loose	0.0	5
				No Recovery/sloUGH		
7.5	5	48	DP 2	7'- Silty sand as 3.5-5' saturat moist to saturated at 8'	0.0	7.5
				$\frac{1}{3}$ SATURATED @ 8'		
10					0.0	10
	5	60	DP 3	11' color change to orange clayey sand (sc) gray w/ orange mottling, soft, saturated	0.0	12.5
12.5				Sandy clay (cc) dk gray, wet Soft to med stiff, wet, thin Sand lenses (F. grained) ~ 0.125' thick	0.0	15

Legend

PID - Photo-ionization detector
 FID - Flame-ionization detector

T - Time

end of Boring well seen 6.16' bgs



CH2MHILL

PROJECT NUMBER

418824.FLSS

BORING NUMBER

MR17-TW18

SHEET 1 OF 2

SOIL BORING LOG

7-18-11

PROJECT: CTO WE41

LOCATION: MCCAMLEY UXO 17

ELEVATION:

DRILLING CONTRACTOR: Probe

DRILLING METHOD AND EQUIPMENT USED:

DPT Geoprobe 6626D, HSA FOR WE41 INSTALL

WATER LEVELS:

START: 0925

END: 1000

LOGGER: K. Regan/ROU

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)			STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION	COMMENTS	
		RECOVERY (IN)				DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	
		#	TYPE				
0	5	60	DP		SILTY SAND (SM) dk brown, dry, med dense, trace wood and roots V. Fine grained	0.0	1
2.5	5	48	DP		SILTY SAND (SM) as above, trace burnt wood pieces	6.1	3
5	5	48	DP		SILTY SAND (SM) brown to lt grayish brown, loose, F. 8. Silty sand (SM) brown/tan dense, moist, V.F.g.	0.1	5
7.5	5	48	DP		4.5-5.5 Silty sand, as (3.5-4.5) 5-6 N.R.	5.0	7
10	5	42	DP		6-10. Poorly graded Sand (SP) loose, moist to saturated light gray/tan, Fine grained brown stain @ 9.5-9.75	0.0	9
12.5	5	42	DP		10-11.5	0.0	11
15	5	42	DP		11.5- Poorly graded Sand (SP) as 6-10, SATURATED	0.0	13
					13.5- Poorly graded Sand (SP) orange staining, gray, coarse med grained SATURATED, fine clay		

Legend

PID - Photo-ionization detector

FID - Flame-ionization detector

T - Time



PROJECT NUMBER 418824.FL.SS	BORING NUMBER MR17 TW18	SHEET 2 OF 2
7-18-11		
SOIL BORING LOG		

PROJECT: CTOWE 41

LOCATION: MCB CAMLEJ UXO-17

ELEVATION:

DRILLING CONTRACTOR:

DRILLING METHOD AND EQUIPMENT USED: DPT GEORGE G620 D1, HSA For Well install

WATER LEVELS:

START: 0925

END: 1000

LOGGER: K. Regan/RDU

DEPTH BELOW SURFACE (FT)			STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION	COMMENTS		
INTERVAL (FT)	RECOVERY (IN)				DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	FID (ppm)	PID (ppm):
	#	TYPE					
15	5	60	DP 3	Poorly graded sand (SP) dk brown - gray med dense, moist (slough)		0.0	
17				Silty sand (SM) tan and gray w/ orange staining, Fine grained poorly-graded (to med. grain) saturated, loose		0.0	
20				Silty Sand (SM) Tan, med dense, saturated, fine grained, trace clay ribbons			
20				End of log Well SCREENED 7-17' Bgs			
15							
20							
25							

Legend

PID - Photo-ionization detector

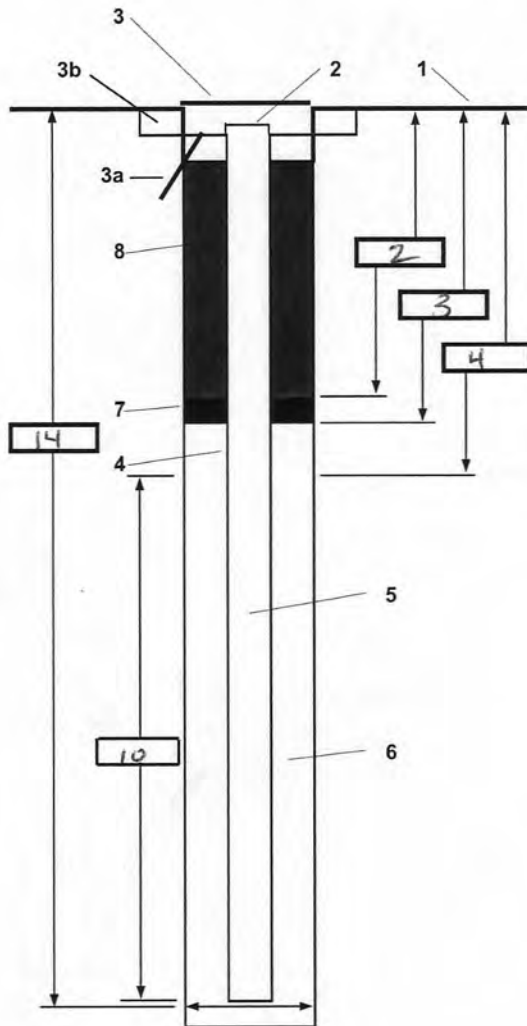
FID - Flame-ionization detector

T - Time



PROJECT NUMBER <u>363366</u>	WELL NUMBER <u>ASR2-212-FR2-TWO1</u>	SHEET <u>1</u>	OF <u>1</u>
WELL COMPLETION DIAGRAM			

PROJECT: 70-09 Firing Range 2 LOCATION: MCB Camp Lejeune
 DRILLING CONTRACTOR: Parratt Wolff
 DRILLING METHOD AND EQUIPMENT USED: Power Probe 9600T 3/4" Casing
 WATER LEVELS: START: 10/7/08 1395 END: 1445 LOGGER: EMUST

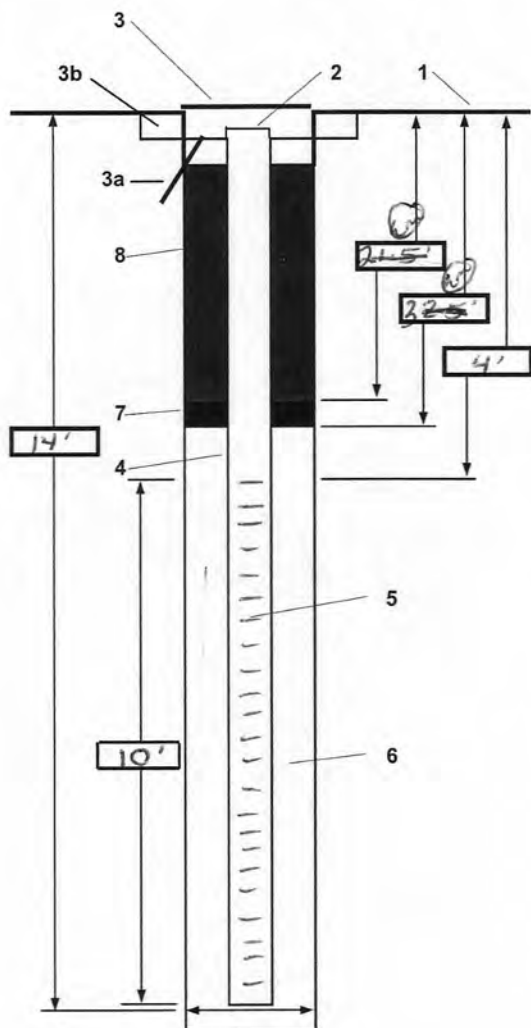


1- Ground elevation at well	<u>NA</u>
2- Top of casing elevation	<u>NA</u>
3- Wellhead protection cover type	<u>locking cap</u>
a) drain tube?	<u>NA</u>
b) concrete pad dimensions	<u>NA</u>
4- Dia./type of well casing	<u>1" Schedule 40 PVC</u>
5- Type/slot size of screen	<u>0.01" PVC</u>
6- Type screen filter	<u>Prepack</u>
a) Quantity used	<u>1/4 bag</u>
7- Type of seal	<u>Bentonite Chips 3/8"</u>
a) Quantity used	<u>1/4 bag</u>
8- Grout	
a) Grout mix used	<u>NA</u>
b) Method of placement	<u>NA</u>
c) Vol. of well casing grout	<u>NA</u>
Development method	<u>Surge + purge</u>
Development time	
Estimated purge volume	
Comments:	



PROJECT NUMBER <u>363366</u>	WELL NUMBER <u>ASR2-212-FR2-TW02</u>	SHEET <u>1</u> OF <u>1</u>
WELL COMPLETION DIAGRAM		

PROJECT: TD-09 Landfill Firing Position 2 LOCATION: MC B Camp Lejeune
 DRILLING CONTRACTOR: Parratt Wolfe
 DRILLING METHOD AND EQUIPMENT USED: Power Probe 9600T 3 1/4" Casing
 WATER LEVELS: START: 10/7/08 1205 END: 1305 LOGGER: E.MUST



1- Ground elevation at well	<u>NA</u>
2- Top of casing elevation	<u>NA</u>
3- Wellhead protection cover type	<u>locking cap</u>
a) drain tube?	<u>NA</u>
b) concrete pad dimensions	<u>NA</u>
4- Dia./type of well casing	<u>1" Schedule 40 PVC</u>
5- Type/slot size of screen	<u>0.01" Machine slotted prepack PVC</u>
6- Type screen filter	<u>Pre pack screen/filter sand</u>
a) Quantity used	
7- Type of seal	<u>Bentonite</u>
a) Quantity used	
8- Grout	
a) Grout mix used	<u>NA</u>
b) Method of placement	<u>NA</u>
c) Vol. of well casing grout	<u>NA</u>
Development method	<u>Surge & Purge</u>
Development time	
Estimated purge volume	
Comments:	



CH2MHILL

PROJECT NUMBER

363344

WELL NUMBER

ASR2.212-FR2-TW03 SHEET

1 OF 1

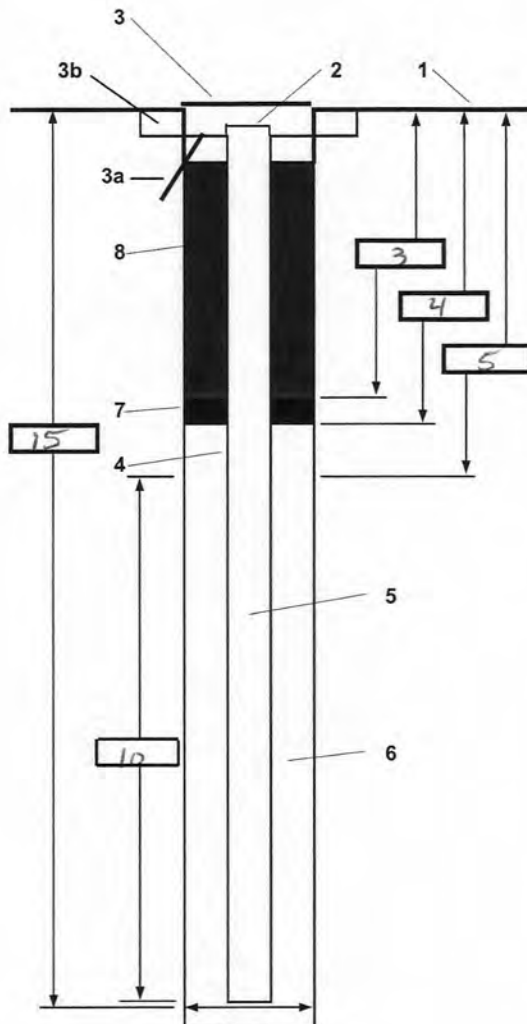
WELL COMPLETION DIAGRAM

PROJECT: TD-89 Landfill Firing Position 2 LOCATION: MCB Camp Lejeune

DRILLING CONTRACTOR: Parrott Well Inc

DRILLING METHOD AND EQUIPMENT USED: Power Probe 9600T

WATER LEVELS: START: 10/7/08 1630 END: 1740 LOGGER: Emust



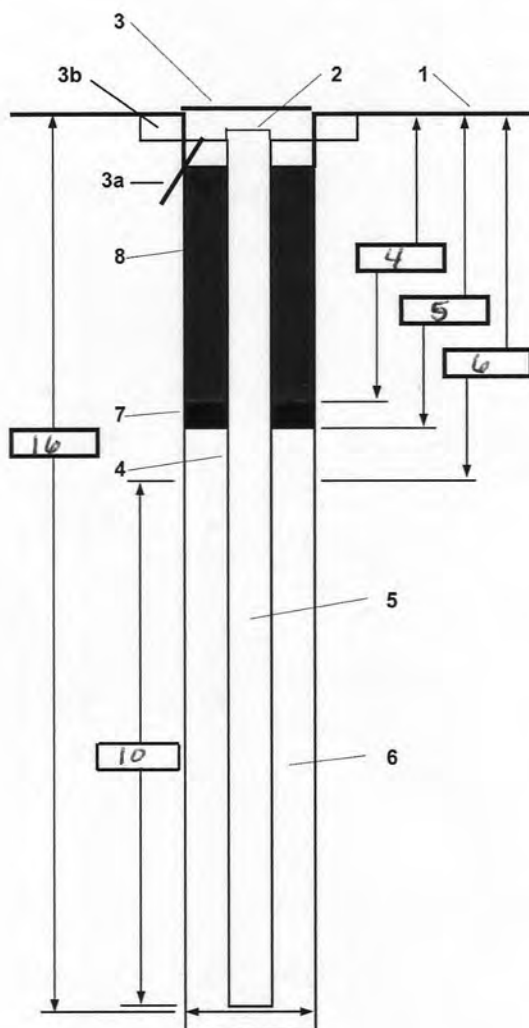
- | | |
|-----------------------------------|---------------------------|
| 1- Ground elevation at well | NA |
| 2- Top of casing elevation | NA |
| 3- Wellhead protection cover type | locking cap |
| a) drain tube? | NA |
| b) concrete pad dimensions | NA |
| 4- Dia./type of well casing | 1" schedule 40 PVC |
| 5- Type/slot size of screen | 0.01" machine slotted PVC |
| 6- Type screen filter | prepack filter sand |
| a) Quantity used | 1/4 bag |
| 7- Type of seal | Bentonite chips |
| a) Quantity used | 1/4 bag |
| 8- Grout | |
| a) Grout mix used | NA |
| b) Method of placement | NA |
| c) Vol. of well casing grout | NA |
| Development method | Surge & Purge |
| Development time | |
| Estimated purge volume | |
| Comments: | |



CH2MHILL

PROJECT NUMBER <u>363366</u>	WELL NUMBER <u>AS22-212-FR2-TW04</u>	SHEET <u>1</u>	OF <u>1</u>
WELL COMPLETION DIAGRAM			

PROJECT: TD-09 Landfill Firing Pos. 2 LOCATION: MCB Camp Lejeune
 DRILLING CONTRACTOR: Parrott Wolff
 DRILLING METHOD AND EQUIPMENT USED: Power Probe 9600T 3 1/4" casing
 WATER LEVELS: START: 0830 10/8/09 END: 0900 LOGGER: E. must



1- Ground elevation at well NA
 2- Top of casing elevation NA
 3- Wellhead protection cover type locking cap
 a) drain tube? NA
 b) concrete pad dimensions NA
 4- Dia./type of well casing 1" PVC (schedule 40)
 5- Type/slot size of screen 0.01" Machine Slotted PVC
 6- Type screen filter Prepack / Filter Sand #1
 a) Quantity used 1.5 bags
 7- Type of seal Bentonite Chips 3/8"
 a) Quantity used 1 1/4 bag
 8- Grout NA
 a) Grout mix used NA
 b) Method of placement NA
 c) Vol. of well casing grout NA
 Development method Surge & Purge
 Development time _____
 Estimated purge volume _____
 Comments:



PROJECT NUMBER

406817.SI.MS

WELL NUMBER

MR-17-TW10

SHEET 1

OF 1

WELL COMPLETION DIAGRAM

PROJECT : MR17 UXO17 (CTO-141)

LOCATION : MCB Camp Lejuene - MR 17

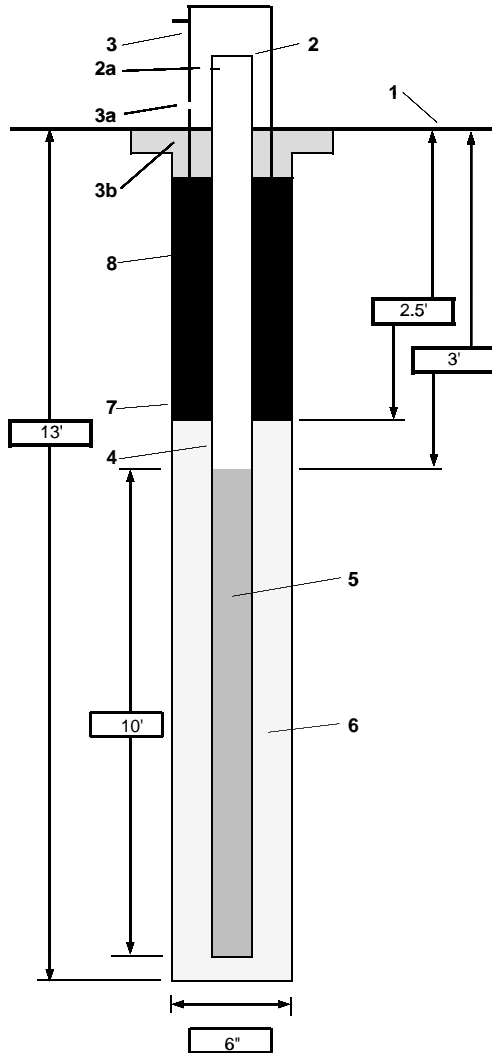
DRILLING CONTRACTOR : American Environmental

DRILLING METHOD AND EQUIPMENT USED : 4.25" Hollow Stem Auger

WATER LEVELS : 5'bgs

START : 12/01/2010 1400

END : 12/01/2010 15 LOGGER : M.L. Ost



1- Ground elevation at well	10.634
2- Top of casing elevation	11.747
a) vent hole?	No
3- Wellhead protection cover type	Stick-up
a) Bollards	none
b) concrete pad dimensions	2' x 2' concrete pad
4- Dia./type of well casing	2" Sch 40 PVC
5- Type/slot size of screen	2" PVC Sch 40 0.010 slot
6- Type screen filter	#1 silica pack
a) Quantity used	5.5 50# Bags
7- Type of seal	Bentonite 3/8" chips
a) Quantity used	1/3 Bag
8- Grout	
a) Grout mix used	None
b) Method of placement	NA
c) Vol. of well casing grout	
Development method	Whale Pmp
Development time	1 hour
Estimated purge volume	40 gal.

Comments _____



PROJECT NUMBER

406817.SI.MS

WELL NUMBER

MR-17-TW11

SHEET 1

OF 1

WELL COMPLETION DIAGRAM

PROJECT : MR17 UXO17 (CTO-141)

LOCATION : MCB Camp Lejuene - MR 17

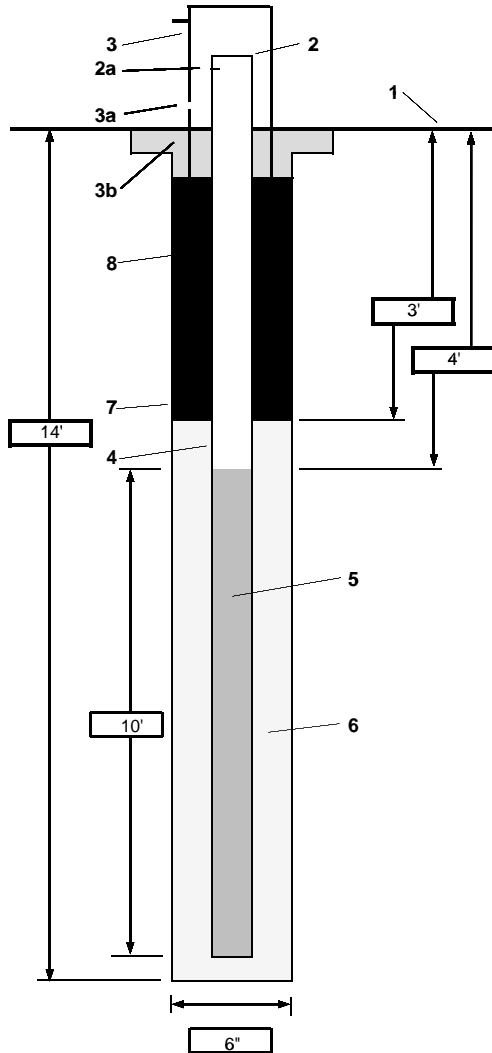
DRILLING CONTRACTOR : American Environmental

DRILLING METHOD AND EQUIPMENT USED : 4.25" Hollow Stem Auger

WATER LEVELS : 6'bgs

START : 12/02/2010 0855

END : 12/02/2010 10 LOGGER : M.L. Ost



1- Ground elevation at well	9.671
2- Top of casing elevation	10.497
a) vent hole?	
3- Wellhead protection cover type	Stick-up
a) Bollards	Four bollards
b) concrete pad dimensions	3' x 3' concrete pad
4- Dia./type of well casing	2" Sch 40 PVC
5- Type/slot size of screen	2" PVC Sch 40 10 slot
6- Type screen filter	#1 silica pack
a) Quantity used	
7- Type of seal	Bentonite 3/8" chips
a) Quantity used	
8- Grout	
a) Grout mix used	Portland Cement, Bentonite grout
b) Method of placement	Tremie Pipe
c) Vol. of well casing grout	
Development method	Whale Pump
Development time	1 hour
Estimated purge volume	45 gal.

Comments _____



PROJECT NUMBER

406817.SI.MS

WELL NUMBER

MR-17-TW12

SHEET 1

OF 1

WELL COMPLETION DIAGRAM

PROJECT : MR17 UXO17 (CTO-141)

LOCATION : MCB Camp Lejuene - MR 17

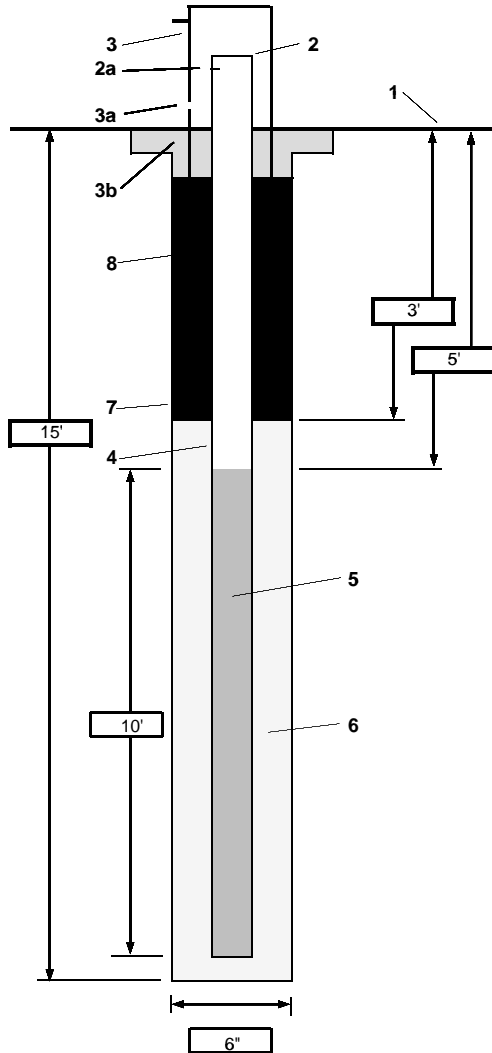
DRILLING CONTRACTOR : American Environmental

DRILLING METHOD AND EQUIPMENT USED : 4.25" Hollow Stem Auger

WATER LEVELS : 7'bgs

START : 12/02/2010 1105

END : 12/02/2010 11 LOGGER : M.L. Ost



1- Ground elevation at well	10.375
2- Top of casing elevation	11.299
a) vent hole?	None
3- Wellhead protection cover type	Stick-up
a) Bollards	None
b) concrete pad dimensions	2' x 2' concrete pad
4- Dia./type of well casing	2" Sch 40 PVC
5- Type/slot size of screen	2" PVC Sch 40 0.010 slot
6- Type screen filter	#1 silica pack
a) Quantity used	5 50# bags
7- Type of seal	Bentonite 3/8" chips
a) Quantity used	1/2 bag
8- Grout	
a) Grout mix used	No grout used
b) Method of placement	NA
c) Vol. of well casing grout	NA
Development method	Whale Pump
Development time	1 hour
Estimated purge volume	40 gal.

Comments _____



PROJECT NUMBER

406817.SI.MS

WELL NUMBER

MR-17-TW13

SHEET 1

OF 1

WELL COMPLETION DIAGRAM

PROJECT : MR17 UXO17 (CTO-141)

LOCATION : MCB Camp Lejuene - MR 17

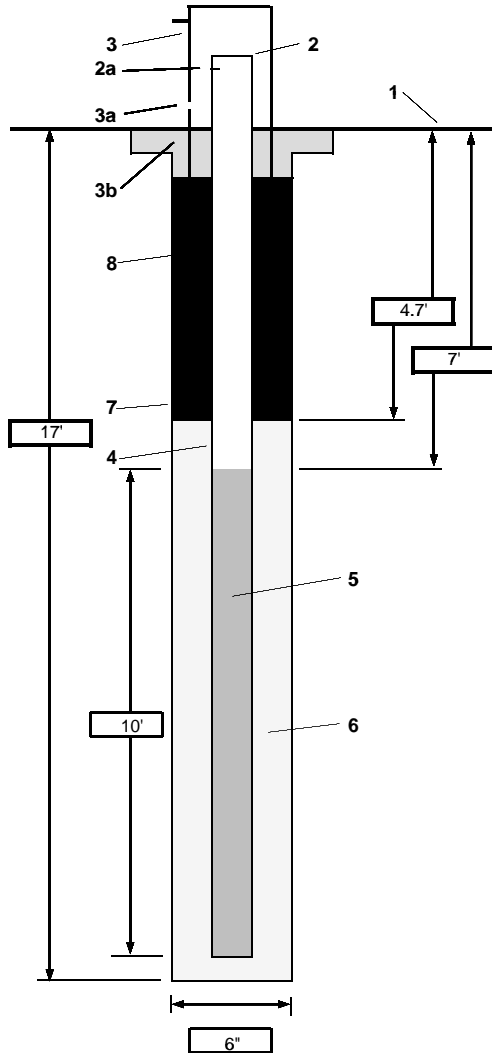
DRILLING CONTRACTOR : American Environmental

DRILLING METHOD AND EQUIPMENT USED : 4.25" Hollow Stem Auger

WATER LEVELS : 7'bgs

START : 12/03/2010 1046

END : 12/03/2010 11 LOGGER : M.L.Ost



1- Ground elevation at well	8.096
2- Top of casing elevation	9.013
a) vent hole?	None
3- Wellhead protection cover type	Stick-up
a) Bollards	None
b) concrete pad dimensions	2' x 2' concrete pad
4- Dia./type of well casing	2" Sch 40 PVC
5- Type/slot size of screen	2" PVC Sch 40 0.010 slot
6- Type screen filter	#1 silica pack
a) Quantity used	5 50# bags
7- Type of seal	Bentonite 3/8" chips
a) Quantity used	1 bag
8- Grout	
a) Grout mix used	None
b) Method of placement	NA
c) Vol. of well casing grout	NA
Development method	Whale Pump
Development time	1.0 hours
Estimated purge volume	32 gal.

Comments _____



PROJECT NUMBER
406817.SI.MS

WELL NUMBER
MR-17-TW14

SHEET 1 OF 1

WELL COMPLETION DIAGRAM

PROJECT : MR17 UX017 (CTO-141)

LOCATION : MCB Camp Lejuene - MR 17

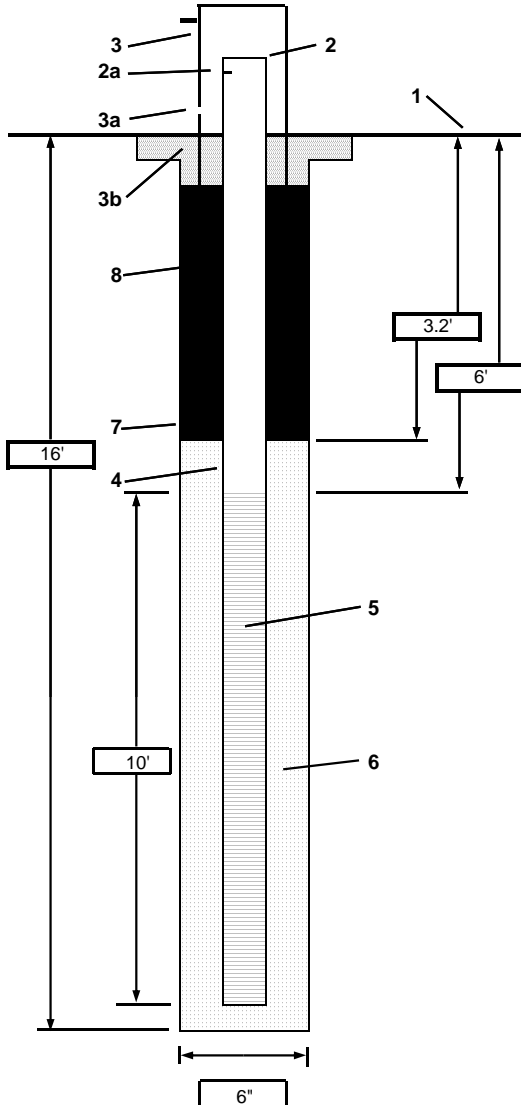
DRILLING CONTRACTOR : American Environmental

DRILLING METHOD AND EQUIPMENT USED : 4.25" Hollow Stem Auger

WATER LEVELS : 7'bgs

START : 12/03/2010 1046

END : 12/03/2010 11 LOGGER : M.L.Ost



1- Ground elevation at well	6.687
2- Top of casing elevation	7.58
a) vent hole?	None
3- Wellhead protection cover type	Stick-up
a) Bollards	None
b) concrete pad dimensions	2' x 2' concrete pad
4- Dia./type of well casing	2" Sch 40 PVC
5- Type/slot size of screen	2" PVC Sch 40 0.010 slot
6- Type screen filter	#1 silica pack
a) Quantity used	5 50# bags
7- Type of seal	Bentonite 3/8" chips
a) Quantity used	1 bag
8- Grout	
a) Grout mix used	None
b) Method of placement	NA
c) Vol. of well casing grout	NA
Development method	Whale Pump
Development time	1.0 hours
Estimated purge volume	27 gal.

Comments _____



PROJECT NUMBER

406817.SI.MS

WELL NUMBER

MR-17-TW15

SHEET 1

OF 1

WELL COMPLETION DIAGRAM

PROJECT : MR17 UXO17 (CTO-141)

LOCATION : MCB Camp Lejuene - MR 17

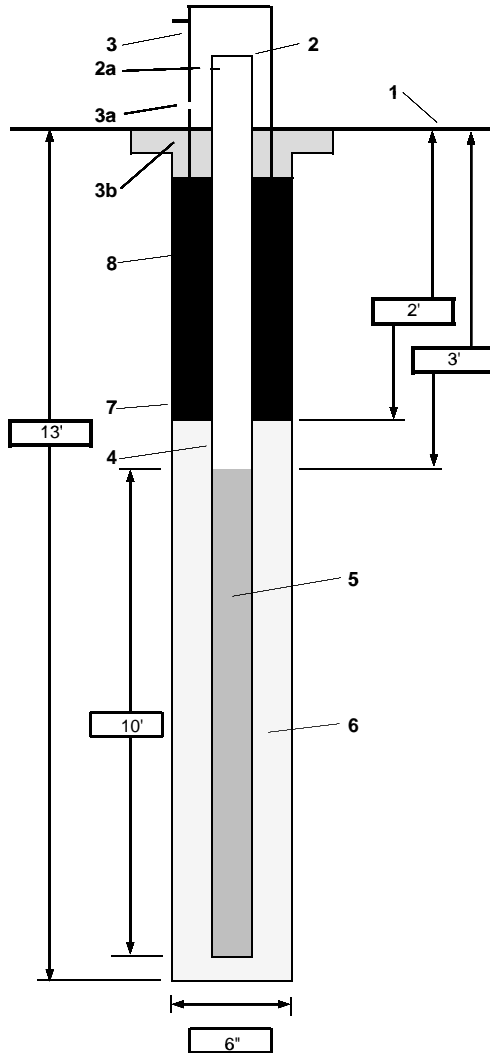
DRILLING CONTRACTOR : American Environmental

DRILLING METHOD AND EQUIPMENT USED : 4.25" Hollow Stem Auger

WATER LEVELS : 3'bgs

START : 12/02/2010 1445

END : 12/02/2010 16 LOGGER : M.L. Ost



1- Ground elevation at well	5.407
2- Top of casing elevation	6.550
a) vent hole?	None
3- Wellhead protection cover type	Stick-up
a) Bollards	None
b) concrete pad dimensions	2' x 2' concrete pad
4- Dia./type of well casing	2" Sch 40 PVC
5- Type/slot size of screen	2" PVC Sch 40 0.010 slot
6- Type screen filter	#1 silica pack
a) Quantity used	5 50# bags
7- Type of seal	Bentonite 3/8" chips
a) Quantity used	1/3 bag
8- Grout	
a) Grout mix used	None
b) Method of placement	NA
c) Vol. of well casing grout	NA
Development method	Whale Pump
Development time	1 hour
Estimated purge volume	46 gal.

Comments _____

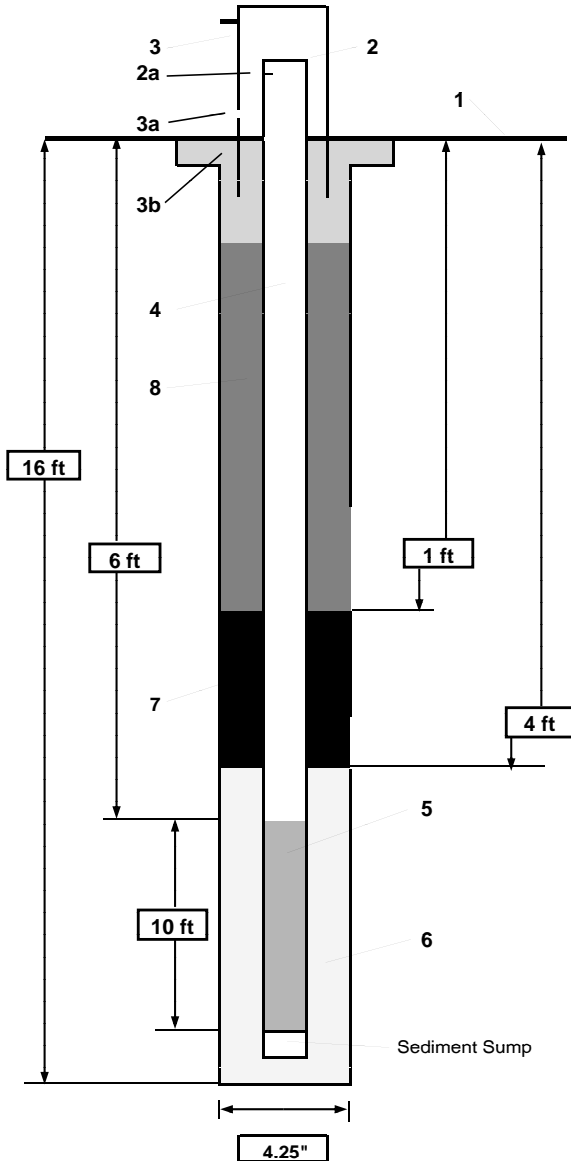
NOTE: Diagram is not to scale.



PROJECT NUMBER 418824.FI.SS	WELL NUMBER MR17-TW17	SHEET 1	OF 1
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WELL COMPLETION DIAGRAM

PROJECT : Camp Lejeune LOCATION : UXO-17
 DRILLING CONTRACTOR : Probe Technologies
 DRILLING METHOD AND EQUIPMENT USED : DPT Geoprobe 6620 DT
 WATER LEVELS : NM START : 7/18/2011 END : 7/18/2011 LOGGER : Kristin Rogers



NOTE: Diagram is not to scale.



PROJECT NUMBER
418824.FI.SS

WELL NUMBER
MR17-TW18

SHEET 1 OF 1

WELL COMPLETION DIAGRAM

PROJECT : Camp Lejeune

LOCATION : UXO-17

DRILLING CONTRACTOR : Probe Technologies

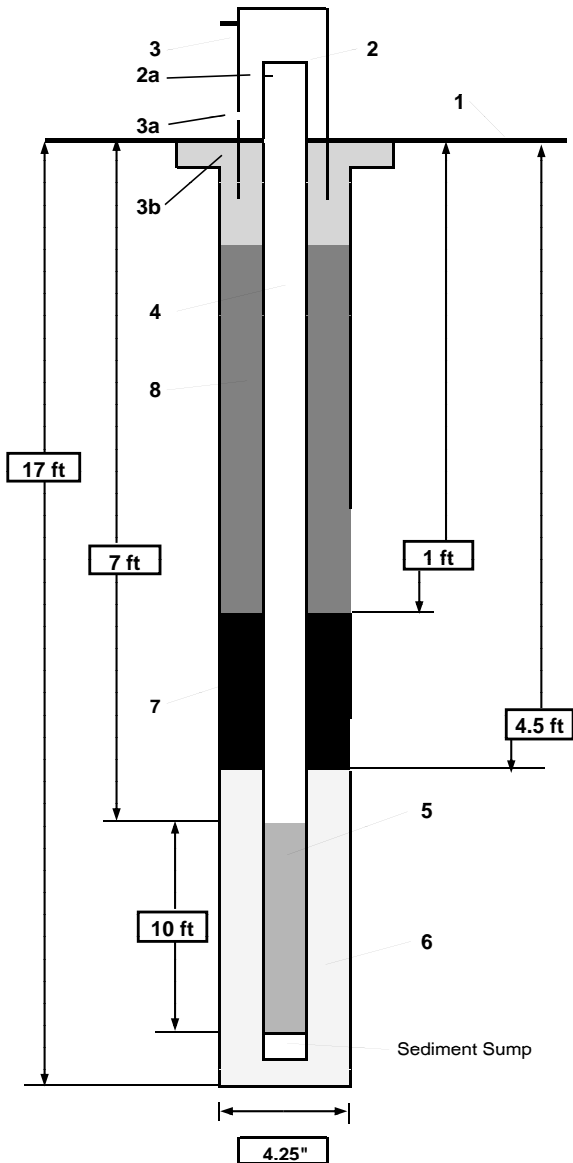
DRILLING METHOD AND EQUIPMENT USED : DPT Geoprobe 6620 DT

WATER LEVELS : NM

START : 7/18/2011

END : 7/18/2011

LOGGER : Kristin Rogers



1- Ground elevation at well	NM	ft
2- Top of casing elevation	NM	ft
a) vent hole?		
3- Wellhead protection cover type	Stickup	
a) weep hole?	no	
b) concrete pad dimensions	2 X 2	
4- Diameter/type of well casing	2-inch PVC	
5- Type/slot size of screen	0.0100 Sch 40	
	PVC	
6- Type screen filter	Filpro sand #9917	
a) Quantity used	5 - 50lb bags	
7- Type of seal	benseal granular bentonite	
a) Quantity used	1.5 - 50 lb bags	
8- Grout		
a) Grout mix used	Quikrete	
b) Method of placement	pour	
c) Vol. of well casing grout	NM	gallons
Development method	Submersible pump	
Development time	1 hour 40 minutes	
Estimated purge volume	65 gallons	
Comments	Drillers will plae bentonite to ~1'bgs and use pad concrete to grout since well is so shallow	

NOTE: Diagram is not to scale.



CH2MHILL

Well Development Sheet

Project Site Name: <u>T0-09 FR2</u>		Well ID: <u>RSR212.FR2 712</u>	
Project No: <u>363366</u>		Contractor: <u>PARRATT WOLFF</u>	

Development data								
	Time	pH SU	Cond. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	Volume gallons
Date: <u>10/8/08</u>	<u>0845</u>	<u>5.04</u>	<u>0.106</u>	<u>20.33</u>	<u>4321</u>	<u>0.94</u>	<u>40</u>	<u>1.25</u>
Method: <u>Surge / purge</u>	<u>0850</u>	<u>5.23</u>	<u>0.391</u>	<u>21.53</u>	<u>1027</u>	<u>0.0</u>	<u>-48</u>	<u>1.7</u>
Pump setting: <u>0.2 4/min</u>	<u>0855</u>	<u>5.16</u>	<u>0.319</u>	<u>21.56</u>	<u>689</u>	<u>0.0</u>	<u>-53</u>	<u>2.0</u>
Well casing dia. (in.): <u>1"</u>	<u>0900</u>	<u>5.15</u>	<u>0.279</u>	<u>21.62</u>	<u>356</u>	<u>0.0</u>	<u>-56</u>	<u>2.25</u>
Total well depth (TOC): <u>14.48</u>	<u>0905</u>	<u>5.14</u>	<u>0.215</u>	<u>21.66</u>	<u>333</u>	<u>0.0</u>	<u>-65</u>	<u>2.5</u>
Static water level (TOC): <u>6.15</u>	<u>0910</u>	<u>5.10</u>	<u>0.167</u>	<u>21.64</u>	<u>292</u>	<u>0.0</u>	<u>-76</u>	<u>2.75</u>
One purge volume (gals.): <u>0.33</u>	<u>0915</u>	<u>5.09</u>	<u>0.142</u>	<u>21.64</u>	<u>246</u>	<u>0.0</u>	<u>-96</u>	<u>3.0</u>
Start time: <u>0815</u>	<u>0920</u>	<u>5.09</u>	<u>0.111</u>	<u>21.63</u>	<u>216</u>	<u>0.0</u>	<u>-115</u>	<u>3.25</u>
End time: <u>1045</u>	<u>0925</u>	<u>5.06</u>	<u>0.077</u>	<u>21.72</u>	<u>197</u>	<u>0.0</u>	<u>-142</u>	<u>3.6</u>
Total dev. volume (gals.): <u>8.0</u>	<u>0930</u>	<u>5.05</u>	<u>0.069</u>	<u>21.78</u>	<u>169</u>	<u>0.0</u>	<u>-153</u>	<u>3.9</u>
Comments: <u>VERY TURBID</u> <u>DID NOT HAVE HORIBA</u> <u>UP UNTIL 0840</u>	<u>0935</u>	<u>5.05</u>	<u>0.068</u>	<u>21.84</u>	<u>160</u>	<u>0.0</u>	<u>-166</u>	<u>4.25</u>
	<u>0940</u>	<u>5.04</u>	<u>0.068</u>	<u>21.83</u>	<u>147</u>	<u>0.0</u>	<u>-171</u>	<u>4.5</u>
	<u>0945</u>	<u>5.02</u>	<u>0.064</u>	<u>21.85</u>	<u>118</u>	<u>0.0</u>	<u>-180</u>	<u>4.75</u>
	<u>0950</u>	<u>4.99</u>	<u>0.062</u>	<u>21.94</u>	<u>112</u>	<u>0.0</u>	<u>-182</u>	<u>5.1</u>
	<u>0955</u>	<u>4.97</u>	<u>0.061</u>	<u>21.97</u>	<u>99.8</u>	<u>0.0</u>	<u>-192</u>	<u>5.3</u>
	<u>1000</u>	<u>4.99</u>	<u>0.054</u>	<u>21.96</u>	<u>100.6</u>	<u>0.0</u>	<u>-184</u>	<u>5.6</u>
	<u>1005</u>	<u>4.93</u>	<u>0.056</u>	<u>22.06</u>	<u>90.7</u>	<u>0.0</u>	<u>-190</u>	<u>5.9</u>
	<u>1010</u>	<u>4.94</u>	<u>0.053</u>	<u>22.12</u>	<u>93.2</u>	<u>0.0</u>	<u>-192</u>	<u>6.15</u>
	<u>1015</u>	<u>4.95</u>	<u>0.050</u>	<u>22.15</u>	<u>87.1</u>	<u>0.0</u>	<u>-192</u>	<u>6.5</u>
	<u>1020</u>	<u>4.93</u>	<u>0.050</u>	<u>22.17</u>	<u>87.0</u>	<u>0.0</u>	<u>-192</u>	<u>6.75</u>
	<u>1025</u>	<u>4.95</u>	<u>0.049</u>	<u>22.22</u>	<u>81.8</u>	<u>0.0</u>	<u>-193</u>	<u>7.0</u>
	<u>1030</u>	<u>4.93</u>	<u>0.049</u>	<u>22.26</u>	<u>79.2</u>	<u>0.0</u>	<u>-197</u>	<u>7.25</u>
	<u>1035</u>	<u>4.92</u>	<u>0.048</u>	<u>22.34</u>	<u>75.2</u>	<u>0.0</u>	<u>-199</u>	<u>7.5</u>
	<u>1045</u>	<u>4.87</u>	<u>0.047</u>	<u>22.33</u>	<u>62.5</u>	<u>0.0</u>	<u>-195</u>	<u>8.0</u>

Observations/Notes:



Well Development Sheet

Project Site Name: To-09 FR2

Project No: 363366

Well ID: 1502-ASR2212.FR2-TW02

Contractor: Parrott WOLFE

Development data								
	Time	pH SU	Cond. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	Volume gallons
Date: <u>10/7/08</u>	<u>1615</u>	<u>—</u>	<u>0.99</u>	<u>23.30</u>	<u>1223</u>	<u>0.81</u>	<u>-573</u>	<u>0.5</u>
Method: <u>Surge + Purge</u>	<u>1625</u>	<u>*16.00</u>	<u>0.99</u>	<u>22.92</u>	<u>122</u>	<u>0.43</u>	<u>-530</u>	<u>1.0</u>
Pump setting: <u>0.35 4/min</u>	<u>1630</u>	<u>*16.00</u>	<u>0.9</u>	<u>22.9</u>	<u>27.3</u>	<u>0.10</u>	<u>-531</u>	<u>1.4</u>
Well casing dia. (in.): <u>1"</u>	<u>1640</u>	<u>5.74</u>	<u>0.38</u>	<u>23.19</u>	<u>28.2</u>	<u>0.29</u>	<u>-373</u>	<u>2.5</u>
Total well depth (TOC): <u>12.78</u>	<u>1645</u>	<u>5.74</u>	<u>0.466</u>	<u>23.26</u>	<u>13.1</u>	<u>0.02</u>	<u>-418</u>	<u>2.75</u>
Static water level (TOC): <u>5.44</u>	<u>1650</u>	<u>5.72</u>	<u>0.370</u>	<u>23.24</u>	<u>7.28</u>	<u>0.00</u>	<u>-428</u>	<u>3.0</u>
One purge volume (gals.): <u>0.29</u>	<u>1655</u>	<u>5.66</u>	<u>0.377</u>	<u>23.22</u>	<u>5.83</u>	<u>0.00</u>	<u>-430</u>	<u>3.5</u>
Start time: <u>1610</u>	<u>1700</u>	<u>5.62</u>	<u>0.376</u>	<u>23.18</u>	<u>4.84</u>	<u>0.00</u>	<u>-426</u>	<u>4.0</u>
End time: <u>1700</u>								
Total dev. volume (gals.): <u>4.0</u>								
Comments:								

Observations/Notes:

*PH NOT READING. STOPPED PUMP TO CLEAN PH meter 1620, looked fine, FLASHES 16.00 when well water is in flow-thru cell. Resumed pumping @ 1623

1640-switched Horbas to 07178

$$1'' = 0.04 \text{ gals/Lt}$$



CH2MHILL

Well Development Sheet

Project Site Name: D-09 Firing Position 2Well ID: AR2-212-FR2-TW03Project No: 30366Contractor: Parratt Wolff

Development data

	Time	pH SU	Cond. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	Volume gallons
Date: <u>10/0/08</u>	<u>1130</u>	<u>6.17</u>	<u>0.496</u>	<u>22.03</u>	<u>1966</u>	<u>1.02</u>	<u>-148</u>	<u>0.75</u>
Method: <u>Surge & purge</u>	<u>1140</u>	<u>6.22</u>	<u>0.594</u>	<u>22.13</u>	<u>1148</u>	<u>0.41</u>	<u>-168</u>	<u>1.2</u>
Pump setting: <u>~ 1' above bottom</u>	<u>1155</u>	<u>6.13</u>	<u>0.511</u>	<u>21.34</u>	<u>28.7</u>	<u>0.22</u>	<u>-157</u>	<u>1.9</u>
Well casing dia. (in.): <u>1</u>	<u>1200</u>	<u>6.21</u>	<u>0.547</u>	<u>21.39</u>	<u>19.6</u>	<u>0.00</u>	<u>-168</u>	<u>2.25</u>
Total well depth (TOC): <u>15.78</u>	<u>1225</u>	<u>6.14</u>	<u>0.537</u>	<u>21.73</u>	<u>22.6</u>	<u>0.02</u>	<u>-174</u>	<u>3.5</u>
Static water level (TOC): <u>9.46</u>	<u>1230</u>	<u>6.20</u>	<u>0.595</u>	<u>21.74</u>	<u>11.5</u>	<u>0.00</u>	<u>-181</u>	<u>3.75</u>
One purge volume (gals.): <u>0.25</u>	<u>1233</u>	<u>6.22</u>	<u>0.577</u>	<u>21.75</u>	<u>1.09</u>	<u>0.00</u>	<u>-178</u>	<u>3.85</u>
Start time: <u>1120</u>								
End time: <u>1233</u>								
Total dev. volume (gals.): <u>3.85</u>								
Comments: <u>water turned more Turbid & yellow when left to sit. slight Sheen on top of Purge water.</u>								

Observations/Notes: 1005- Surge w/ Dailer for 10-20 minutes



CH2MHILL

Well Development Sheet

Project Site Name: TD-09 Firing Position 2Well ID: ASR2-212-FR2-TW04Project No: 363366Contractor: Parraff Wolff

Development data									DTW
	Time	pH SU	Cond. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	Volume gallons	
Date: <u>10/8/08</u>	<u>1148</u>	<u>5.43</u>	<u>0.117</u>	<u>20.94</u>	<u>101.2</u>	<u>1.90</u>	<u>48</u>	<u>0.75</u>	<u>11.6</u>
Method: <u>Surge & purge</u>	<u>1153</u>	<u>5.10</u>	<u>0.113</u>	<u>21.01</u>	<u>37.6</u>	<u>1.83</u>	<u>52</u>	<u>1.1</u>	<u>11.6</u>
Pump setting: <u>~1' above bottom</u>	<u>1212</u>	<u>5.45</u>	<u>0.106</u>	<u>22.01</u>	<u>37.9</u>	<u>2.30</u>	<u>69</u>	<u>1.8</u>	<u>11.55</u>
Well casing dia. (in.): <u>1</u>	<u>1217</u>	<u>5.03</u>	<u>0.108</u>	<u>21.45</u>	<u>23.2</u>	<u>2.11</u>	<u>84</u>	<u>2.1</u>	<u>11.54</u>
Total well depth (TOC): <u>15.82</u>	<u>1222</u>	<u>4.97</u>	<u>0.104</u>	<u>21.56</u>	<u>143</u>	<u>1.96</u>	<u>74</u>	<u>2.5</u>	<u>11.45</u>
Static water level (TOC): <u>10.61</u>	<u>1244</u>	<u>4.97</u>	<u>0.102</u>	<u>21.75</u>	<u>4.2</u>	<u>1.79</u>	<u>95</u>	<u>3.25</u>	<u>—</u>
One purge volume (gals.): <u>0.21</u>	<u>1249</u>	<u>4.84</u>	<u>0.099</u>	<u>21.82</u>	<u>4.47</u>	<u>1.66</u>	<u>100</u>	<u>3.5</u>	<u>—</u>
Start time: <u>1135</u>	<u>1254</u>	<u>4.79</u>	<u>0.098</u>	<u>21.71</u>	<u>3.15</u>	<u>1.61</u>	<u>101</u>	<u>3.75</u>	<u>—</u>
End time: <u>1255</u>									
Total dev. volume (gals.): <u>3.75</u>									
Comments: Flow rate ~ 0.2 gpm Must take out the ~2.5 gal added by drillers during installation.									

Observations/Notes:

1025 - Surge w/ Bailer for 10-20 minutes.
- Having to chase Horiba w/ KR @ TW03



Ревдормен

Project Number:

Project Number: ~~27012-FFS~~ 406817 S.F. MS
Well ID: MR17 - TW10 09 09
HILL Personnel: J. Crostic


Measuring Device(s): YSI C102874
HALK 101241

Well Dia. (inches)	Volume (gallons/foot)
0.75	0.023
1	0.041
2	0.163
4	0.653
6	1.469

[illegible]

Comments:

Signature(s): 

Signature(s): 



Ux5-17

WELL PURGE DATA

Project Number: 377842.F1.F3 40687.51.42
Well ID: MR17-TW02 10
HILL Personnel: _____

Measuring Device(s): 45: C102074
Harsh 101241

Purge Device: Whisper Purge

Well Dia. (inches)	Volume (gallons/foot)
0.75	0.023
1	0.041
2	0.163
4	0.653
6	1.469

FIELD PARAMETERS

[illegible]

Total Volume Purged: 40 ~~24~~ gallon

Comments:

Signature(s):

9-E

Ухо 17. Переломный.

WELL PURGE DATA

Client: NAVFAC Mid-Atlantic
Location: MCB CAMP LEJEUNE
Event: ~~Camp Devil Dog Construction Area~~
Date: 12/5/10
Weather: Clear

Project Number: 377812.FLFS 4568.1.7 S-NO
Well ID: M214 - 2002 TW11 (94)
CH2M HILL Personnel: Julie Smith

Total Depth:	<u>16.90</u>	FT.(BTOC)
Depth to water:	<u>(-) 6.64</u>	FT.(BTOC)
Water Column:	<u>10.26</u>	FT.
	<u>(x) .183</u>	GAL/FT.
Well Volume:	<u>4</u>	GAL.
Total Purge Vol.:	<u>42.45</u>	GAL.

Measuring Device(s): U.S. C102574
4406 101247

Purge Device: White Pngt

Well Dia. (inches)	Volume (gallons/foot)
0.75	0.023
1	0.041
2	0.163
4	0.653
6	1.469

FIELD PARAMETERS

[illegible]

Total Volume Purged: 45 42 gallons

Comments: Began collecting @ 0750

Intermediate Flow

Signature(s):

UXO-17 Development

WELL PURGE DATA

Client: NAVFAC Mid-Atlantic
 Location: MCB CAMP LEJEUNE
 Event: Camp Devil Dog Construction Area
 Date: _____
 Weather: _____

Project Number: 077012 FILES 406817.5 FILES
 Well ID: MR17-TW 12 02
 CH2M HILL Personnel: J. Crostic

Total Depth: 17.90 FT.(BTOT)
 Depth to water: (-) 9.40 FT.(BTOT)
 Water Column: 8.50 FT.
 Well Volume: (x) .163 GAL/FT.
 Total Purge Vol.: 1.3 GAL.
40 GAL.

Measuring Device(s): YSI 6102074
Hach 101241

Purge Device:

*WHOLE PUMP
 PERMEATION PUMP*


Well Dia. (inches)	Volume (gallons/foot)
0.75	0.023
1	0.041
2	0.163
4	0.653
6	1.469

FIELD PARAMETERS

Time	Depth to Water (ft bgs)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Flow Rate (mL/min)	Color / Odor / Comments
Stabilization Criteria		± 1 °C	± 10%	± 10%	± 0.1	± 10 mV	± 10% or <10		
0855		16.57	0.182	12.01	5.28	224.3	7999		
0905		19.03	0.182	13.33	5.40	219.7	7999		
0915		19.14	0.184	13.47	5.43	217.8	7999		
0925		15.21	0.186	13.65	5.49	221.2	7999		
0935		16.21	0.178	13.27	5.61	260.8	212		
0945		18.21	0.166	14.57	5.60	225.2	68		
0955		18.30	0.164	14.52	5.33	231.3	25		

Total Volume Purged: 40 gallons

Comments: very silty till about 0935 reading

Signature(s): 



Development

WELL PURGE DATA

Project Number: 97812 ELS 406817-SI-MS
Well ID: MR17-TW 14 (92)
CH2M HILL Personnel: J. Crooke

Measuring Device(s): YSI C102074
Hach 101241

Purge Device: ~~horrible~~ pump

Well Dia. (inches)	Volume (gallons/foot)
0.75	0.023
1	0.041
2	0.163
4	0.653
6	1.469

FIELD PARAMETERS

[illegible]

Total Volume Purged: 27 gallons

Comments:

Signature(s):

UXO-17 Development

WELL PURGE DATA

Client: NAVFAC Mid-Atlantic
 Location: MCB CAMP LEJEUNE
 Event: Camp Devil Dog Construction Area
 Date: 12/4/10
 Weather: 38°F

Project Number: 377812.FIFS 406817-52.45
 Well ID: MB17-TW15 @
 CH2M HILL Personnel: J. Crostic

Total Depth: 15.67 FT.(BTOC)
 Depth to water: (-) 2.15 FT.(BTOC)
 Water Column: 8.95 FT.
 (x) .163 GAL/FT.
 Well Volume: 1.39 GAL.
 Total Purge Vol.: 42 GAL.

Measuring Device(s): ysi c102874
 Hach 101241

Purge Device: *hussman pump*

Well Dia. (inches)	Volume (gallons/foot)
0.75	0.023
1	0.041
2	0.163
4	0.653
6	1.469

FIELD PARAMETERS

Time	Depth to Water (ft bgs)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Flow Rate (mL/min)	Color / Odor / Comments
Stabilization Criteria		± 1 °C	± 10%	± 10%	± 0.1	± 10 mV	± 10% or <10		
1240		15.75	0.139	10.86	7.98	163.0	220.	250	
1250		15.77	0.140	10.92	4.89	150.9	192	250	
1300		15.86	0.144	10.02	5.07	146.2	56.8	250	
1310		16.76	0.140	11.92	5.07	143.7	42.0	250	
1320		16.95	0.140	10.29	5.06	132.6	32.3	250	
1330		16.92	0.140	9.12	5.05	131.2	26.2	250	
1340		16.82	0.139	10.92	5.04	132.2	30.2	250	

Total Volume Purged: 42 gallons

Comments: turbidity would not drop any further

Signature(s): *[Signature]*



Well Development Sheet

Project Site Name: UXO-17

Well ID: 7/21/11
TW-16

Project No: 418824.FI.SS

Contractor: Probe Technologies

Development data

	Time	pH SU	Cond. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	Volume gallons
Date: 7/19/11	1025	5.96	0.330	19.82	300	8.04	51.2	NM
Method: Submersible	1030	5.82	0.320	19.69	7100	2.80	12.4	↓ 55 NM
Pump setting: N/A	1035	5.74	0.304	19.58	7100	2.63	0.7	
Well casing dia. (in.): 2	1040	5.66	0.301	19.56	7100	2.54	1.9	
Total well depth (TOC): 19.11	1040	5.66	0.295	19.51	18.0	2.52	-2.3	
Static water level (TOC): 12.34	1050	5.61	0.291	19.49	13.0	2.31	-2.7	
One purge volume (gals.): 1.1	1055	5.61	0.290	19.46	10.0	2.23	-3.6	
Start time: 1015	1100	5.59	0.288	19.48	12.0	2.07	-4.3	
End time: 1115	1105	5.57	0.286	19.48	6.00	1.89	-5.1	
Total dev. volume (gals.): ~75	1110	5.56	0.284	19.45	40.0	1.79	-6.8	
Comments:	1115	5.54	0.281	19.40	12.0	1.69	-8.7	
② 1110 shoot flow thru cell so high turb								

Observations/Notes:

more H₂O pumped in less time than TW-18 due to a larger pump being used
very clear H₂O

Kimberly Oke 7/19/11



CH2MHILL

Project Number:

418824.FI.SS

WELL DEVELOPMENT DATA SHEET

Client: Camp Lejeune
Location: UXO-17
Event: Well installation
Date: 7/18/2011
Weather: sunny and mild ~75°

Well ID: MR17-TW17
Sample ID: NA

Sample Team: Kristin Rogers/RDU

Total Depth: 18.6 FT.(BTOC)
Depth to water: (-) 10.75 FT.(BTOC)
Water Column: 7.85 FT.
(x) 0.163 GAL/FT.
Well Volume: 1.28 GAL.
Total Purge Volume: -50 GAL.
Purge Device: Submersible

Measuring Device: YSI 556

Date and Time: 7/18/2011 16:35

WELL DIAMETER

[(2" DIA.= 0.163 GAL/FT.) (4" DIA. = 0.653 GAL/FT.)]
(1" DIA. = 0.041 GAL/FT.) (1 1/4 " DIA.= 0.064 GAL/FT.)

FIELD PARAMETERS

Time	Cumulative Purge Vol. (gals)	Temp., (°C)	Cond. (µS/cm)	pH	Dissolved Oxygen (mg/L)	ORP (mv)	Turbidity (NTU)	Color / Odor / Comments
1645	-	-	-	-	-	-	-	Pump On
1700	15	-	0.525	6.25	-	40.5	>500	
1705	20	22.01	0.503	6.32	-	31.3	>500	
1715	30	21.89	0.496	6.34	7.6	52.9	35	
1720	35	21.72	0.491	6.48	5.78	76.7	15	
1735	50	-	-	-	-	-	Clear	

Sample information: method, container number, size, and type, preservative used.

N/A

Sample Time N/A

Sample Appearance N/A

Notes:

Field parameters were collected using a YSI water quality meter. Turbidity was collected with a Turbidimeter

Signed by:

Kimberley Coke on behalf of Kristin Rogers

7/18/2011

DATE

Well Development Sheet

Project Site Name: UXO-17

Well ID: TW-18

Project No: 418824, F.I.S.S

Contractor: Probe Technologies

Development data

[illegible]

Observations/Notes:

Observations/Notes: Complete stabilization ~~may~~^{to} was ~~not~~^{to} attained, however ~~it~~^{it} ~~feels~~^{feels} this well is developed

Kimberly Ake

7/19/11

Appendix C

Civil Survey Reports

WELL ID	NORTHING	EASTING	PVC	GROUND
ASR2.212-TW03	3841604.861	287528.067	7.122	7.027
ASR2.212-TW02	3841576.286	287428.495	6.906	6.796
ASR2.212-TW01	3841609.675	287432.007	6.618	6.507
ASR2.212-TW04	3841568.889	287529.403	7.459	7.431

REF: BENCHMARK REF NORTH CAROLINA GEODETIC NETWORK
 JACKSONVILLE CORS
 MOREHEAD CITY CORS
 CASTLE HAYNE CORS
 UTM ZONE 18 NORTH NAD 83 (NSRS 2007) METERS
 ELEVATION DATUM
 NAVD 88 METERS

10/27/2008



Brent A. Lanier
 10/27/08

POINT ID	NORTING	EASTING
SEED 34	3841602.744	287526.956
SEED 4	3841617.871	287451.527
SEED 37	3841545.011	287453.879
SEED 3	3841551.498	287508.046

REF: BENCHMARK REF NORTH CAROLINA GEODETIC NETWORK
 JACKSONVILLE CORS
 MOREHEAD CITY CORS
 CASTLE HAYNE CORS
 UTM ZONE 18 NORTH NAD 83 (NSRS 2007) METERS
 9/24/2008



Brent A. Lanier
 9/28/08



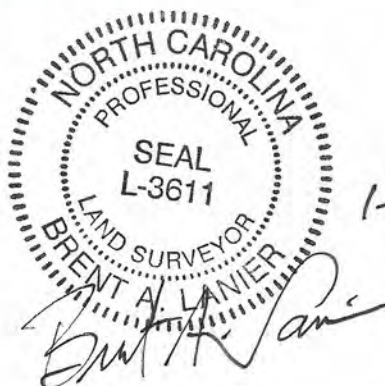
134 Cedar Point Boulevard
Cedar Point NC, 28584

Date: 1-24-2011

Reference: Expanded Site Investigation
Unexploded Ordnance Site (UXO)-17
Camp Lejeune, NC

Datum: UTM ZONE 18 NORTH NAD 83 (NSRS 2007) METERS
Vertical Datum: NAVD 88 METERS
Control Reference: NC CORS NETWORK

POINT ID	NORTHING	EASTING	PVC	GROUND
TW 09	3841516.484	287389.682	11.467	10.357
TW 10	3841462.248	287427.709	11.747	10.634
TW 11	3841440.775	287524.747	10.497	9.671
TW 12	3841436.237	287574.796	11.299	10.375
TW 13	3841552.875	287659.391	9.013	8.096
TW 15	3841660.259	287503.880	6.550	5.407
TW 14	3841662.187	287583.333	7.580	6.687
IS 07	3841641.534	287572.300		
IS 08	3841542.525	287594.641		
IS 04	3841518.423	287600.539		
IS 06	3841611.770	287641.334		
IS 05	3841462.499	287626.897		
IS 03	3841426.166	287506.387		
IS 01	3841502.387	287442.064		
IS 02	3841486.428	287500.599		





134 Cedar Point Boulevard
Cedar Point NC, 28584

Date: 11-15-2010

Reference: Expanded Site Investigation

Unexploded Ordnance Site (UXO)-17

Task Order 141

MCB Camp Lejeune, North Carolina

Datum: UTM ZONE 18 NORTH NAD 83 (NSRS 2007) METERS

Control Reference: North Carolina Geodetic Network

Jacksonville CORS

Castle Hayne CORS

Morehead City CORS

Decision Unit Survey

POINT ID	NORTHING	EASTING	Description
2001	3841533.389	287441.310	MR17-DU01
2002	3841516.679	287471.621	MR17-DU01
2003	3841481.755	287447.771	MR17-DU01
2004	3841500.358	287420.326	MR17-DU01
2005	3841514.776	287497.747	MR17-DU02
2006	3841501.007	287516.757	MR17-DU02
2007	3841464.857	287490.574	MR17-DU02
2008	3841478.626	287471.565	MR17-DU02
2009	3841485.784	287511.422	MR17-DU03
2010	3841507.94	287527.406	MR17-DU03
2011	3841484.752	287559.548	MR17-DU03
2012	3841462.596	287543.564	MR17-DU03
2013	3841500.968	287593.621	MR17-DU04
2014	3841500.747	287611.904	MR17-DU04
2015	3841484.814	287611.904	MR17-DU04
2016	3841484.183	287593.621	MR17-DU04
2017	3841547.378	287571.102	MR17-DU05
2018	3841559.425	287593.640	MR17-DU05
2019	3841525.617	287614.236	MR17-DU05
2020	3841512.02	287592.219	MR17-DU05



134 Cedar Point Boulevard
Cedar Point NC, 28584

Date: 11-15-2010

Reference: Expanded Site Investigation

Unexploded Ordnance Site (UXO)-17

Task Order 141

MCB Camp Lejeune, North Carolina

Datum: UTM ZONE 18 NORTH NAD 83 (NSRS 2007) METERS

Control Reference: North Carolina Geodetic Network

Jacksonville CORS

Castle Hayne CORS

Morehead City CORS

Seed Location Survey

POINT ID	NORTHING	EASTING	Description
165	3841661.701	287487.591	QC 2
282	3841486.644	287568.343	QC 1



134 Cedar Point Boulevard
Cedar Point NC, 28584

Date: 11-15-2010

Reference: Expanded Site Investigation

Unexploded Ordnance Site (UXO)-17

Task Order 141

MCB Camp Lejeune, North Carolina

Datum: UTM ZONE 18 NORTH NAD 83 (NSRS 2007) METERS

Control Reference: North Carolina Geodetic Network

Jacksonville CORS

Castle Hayne CORS

Morehead City CORS

Transect Survey

POINT ID	NORTHING	EASTING	Description
3	3841553.618	287465.054	PT3 CONTROL
4	3841504.088	287604.705	PT 4 CONTROL
5	3841504.096	287604.683	PT 5 CONTROL
6	3841510.093	287589.915	PT 6 CONTROL
7	3841513.926	287579.577	PT 7 CONTROL
8	3841516.972	287569.006	PT 8 CONTROL
9	3841519.49	287560.785	PT 9 CONTROL
10	3841521.295	287556.697	PT 10 CONTROL
11	3841524.856	287547.023	PT 11 CONTROL
12	3841527.623	287539.601	PT 12 CONTROL
13	3841530.089	287531.690	PT 13 CONTROL
14	3841533.59	287521.744	PT 14 CONTROL
15	3841536.418	287513.592	PT 15 CONTROL
16	3841539.429	287501.438	PT 16 CONTROL
17	3841544.667	287494.300	PT 17 CONTROL
18	3841530.565	287476.700	PT 18 CONTROL
19	3841523.589	287469.775	PT 19 CONTROL
20	3841535.783	287437.903	PT 20 CONTROL
21	3841541.501	287406.812	PT 21 CONTROL
22	3841540.821	287402.838	PT 22 CONTROL
23	3841539.578	287388.876	PT 23 CONTROL
24	3841536.95	287375.939	PT 24 CONTROL
25	3841480.014	287604.510	STAKE
26	3841455.057	287604.333	STAKE
27	3841443.137	287604.170	STAKE

28	3841527.633	287605.757	STAKE
29	3841549.555	287605.378	STAKE
30	3841565.001	287606.674	STAKE
31	3841579.099	287609.351	STAKE
32	3841596.179	287608.139	STAKE
34	3841545.016	287374.811	STAKE
35	3841526.496	287377.061	STAKE
36	3841508	287380.537	STAKE
37	3841479.901	287389.869	STAKE
38	3841499.736	287389.501	STAKE
39	3841522.583	287388.480	STAKE
40	3841543.686	287389.296	STAKE
41	3841565.795	287390.631	STAKE
42	3841585.968	287389.442	STAKE
43	3841605.291	287399.675	STAKE
44	3841583.032	287399.317	STAKE
45	3841545.847	287404.359	STAKE
46	3841530.5	287402.730	STAKE
47	3841508.619	287403.522	STAKE
48	3841492.747	287403.934	STAKE
49	3841481.091	287404.390	STAKE
50	3841455.396	287399.728	STAKE
51	3841441.534	287411.534	STAKE
52	3841459.889	287414.676	STAKE
53	3841478.42	287414.244	STAKE
54	3841498.988	287412.015	STAKE
55	3841514.984	287410.305	STAKE
56	3841542.827	287410.156	STAKE
57	3841602.565	287409.961	STAKE
58	3841619.174	287409.461	STAKE
59	3841630.286	287419.980	STAKE
60	3841616.431	287417.760	STAKE
62	3841540.035	287418.768	STAKE
63	3841527.369	287418.036	STAKE
64	3841508.928	287417.176	STAKE
65	3841491.044	287418.764	STAKE
66	3841474.753	287419.946	STAKE
67	3841457.212	287420.871	STAKE
68	3841431.1	287417.298	STAKE
69	3841426.292	287426.830	STAKE
70	3841451.445	287428.932	STAKE
71	3841473.723	287427.881	STAKE
72	3841495.94	287427.703	STAKE
73	3841517.544	287428.715	STAKE
74	3841536.507	287428.456	STAKE
75	3841627.405	287427.603	STAKE
76	3841641.563	287424.281	STAKE
77	3841635.624	287439.056	STAKE
78	3841651.199	287437.833	STAKE
79	3841535.935	287438.691	STAKE
80	3841519.752	287439.048	STAKE
81	3841501.078	287439.407	STAKE

82	3841477.923	287437.844	STAKE
83	3841457.732	287436.440	STAKE
84	3841446.159	287436.226	STAKE
85	3841431.481	287436.819	STAKE
86	3841416.743	287438.289	STAKE
91	3841406.807	287448.849	STAKE
92	3841425.433	287448.936	STAKE
93	3841439.635	287448.957	STAKE
94	3841456.572	287450.397	STAKE
95	3841479.165	287448.885	STAKE
96	3841503.937	287448.786	STAKE
97	3841534.932	287448.802	STAKE
98	3841644.508	287447.971	STAKE
99	3841656.023	287448.280	STAKE
100	3841650.792	287459.755	STAKE
101	3841663.323	287461.294	STAKE
102	3841656.248	287468.882	STAKE
103	3841667.973	287471.695	STAKE
104	3841533.524	287458.729	STAKE
105	3841519.289	287458.842	STAKE
106	3841499.49	287464.716	STAKE
107	3841481.282	287462.595	STAKE
108	3841462.873	287457.595	STAKE
109	3841444.824	287456.513	STAKE
110	3841426.714	287463.810	PT 110 CONTROL
115	3841435.626	287454.250	STAKE
116	3841421.932	287456.401	STAKE
117	3841407.248	287453.072	STAKE
118	3841400.704	287458.794	STAKE
119	3841418.086	287462.535	STAKE
120	3841414.532	287470.443	STAKE
121	3841396.082	287465.973	STAKE
122	3841392.582	287474.439	STAKE
123	3841410.597	287478.339	STAKE
124	3841404.889	287487.657	STAKE
125	3841391.634	287482.272	STAKE
126	3841390.51	287491.238	STAKE
127	3841409.941	287503.366	STAKE
128	3841415.51	287490.954	STAKE
129	3841419.067	287483.517	STAKE
130	3841424.027	287474.993	STAKE
131	3841436.272	287467.776	STAKE
132	3841437.835	287477.806	STAKE
133	3841432.929	287485.368	STAKE
134	3841432.218	287493.559	STAKE
135	3841431.057	287505.920	STAKE
136	3841442.351	287509.495	STAKE
137	3841416.858	287519.860	STAKE
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142	3841460.15	287472.394	STAKE
143	3841481.158	287476.914	STAKE

144	3841501.277	287482.324	STAKE
145	3841516.608	287487.318	STAKE
150	3841514.425	287475.229	STAKE
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152	3841472.579	287467.376	STAKE
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160	3841460.68	287482.016	STAKE
161	3841658.394	287479.020	STAKE
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163	3841658.333	287486.937	STAKE
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166	3841650.521	287499.154	STAKE
167	3841666.003	287506.413	STAKE
168	3841641.269	287511.392	STAKE
169	3841655.12	287516.167	STAKE
170	3841631.162	287520.479	STAKE
171	3841645.839	287531.774	STAKE
172	3841661.092	287539.555	STAKE
173	3841670.963	287559.057	STAKE
174	3841659.507	287555.529	STAKE
175	3841643.566	287549.090	STAKE
176	3841627.363	287534.451	STAKE
177	3841620.268	287527.624	STAKE
178	3841606.127	287539.282	STAKE
179	3841621.394	287549.624	STAKE
180	3841640.959	287557.515	STAKE
183	3841665.116	287564.370	STAKE
184	3841666.123	287569.773	STAKE
185	3841648.653	287566.268	STAKE
186	3841629.715	287562.020	STAKE
187	3841608.474	287555.366	STAKE
188	3841599.633	287551.853	STAKE
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202	3841483.975	287510.556	STAKE
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207	3841506.513	287525.486	STAKE
208	3841493.458	287522.692	STAKE
209	3841478.788	287518.664	STAKE
210	3841535.641	287530.943	STAKE
213	3841547.048	287541.965	STAKE

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224	3841528.999	287548.421	STAKE
225	3841515.385	287548.329	STAKE
226	3841504.864	287545.986	STAKE
227	3841495.739	287544.942	STAKE
228	3841479.037	287543.080	STAKE
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232	3841421.65	287537.334	STAKE
233	3841443.919	287529.088	STAKE
234	3841464.784	287534.028	STAKE
237	3841571.946	287559.742	STAKE
238	3841551.515	287557.554	STAKE
239	3841536.093	287556.746	STAKE
240	3841515.345	287558.877	STAKE
241	3841503.947	287554.775	STAKE
242	3841486.135	287553.309	STAKE
243	3841471.825	287550.663	STAKE
244	3841456.262	287550.293	STAKE
245	3841441.592	287548.212	STAKE
246	3841424.202	287545.761	STAKE
248	3841515.328	287558.871	STAKE
249	3841486.141	287553.359	STAKE
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251	3841456.252	287550.318	STAKE
252	3841424.177	287545.798	STAKE
256	3841525.858	287560.848	STAKE
257	3841541.926	287561.456	STAKE
258	3841556.511	287563.103	STAKE
259	3841571.948	287564.202	STAKE
260	3841586.623	287566.505	STAKE
261	3841605.641	287567.801	STAKE
262	3841621.704	287568.961	STAKE
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264	3841654.647	287573.384	STAKE
265	3841673.475	287574.693	STAKE
266	3841513.784	287561.430	STAKE
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272	3841527.121	287569.807	STAKE
273	3841543.258	287570.981	STAKE
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277	3841622.838	287580.093	STAKE
278	3841635.593	287581.825	STAKE
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283	3841467.402	287566.030	STAKE
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296	3841504.777	287579.382	STAKE
297	3841493.046	287578.300	STAKE
298	3841478.69	287577.623	STAKE
299	3841466.194	287576.540	STAKE
300	3841444.749	287574.197	STAKE
301	3841434.358	287573.675	STAKE
305	3841517.789	287590.129	STAKE
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309	3841594.352	287595.364	STAKE
310	3841611.498	287597.732	PT 310 CONTROL
311	3841611.313	287597.685	STAKE
312	3841628.017	287598.673	STAKE
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316	3841456.352	287582.777	STAKE
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321	3841479.662	287598.789	STAKE
322	3841499.101	287598.827	STAKE
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328	3841460.629	287612.201	STAKE
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330	3841497.329	287613.230	STAKE
331	3841517.595	287613.551	STAKE
332	3841539.122	287615.268	STAKE
333	3841558.971	287627.833	STAKE
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335	3841521.096	287625.572	STAKE
336	3841501.67	287621.605	STAKE
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339	3841448.542	287621.685	STAKE

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341	3841469.881	287629.017	STAKE
342	3841484.901	287630.170	STAKE
343	3841499.655	287630.397	STAKE
344	3841503.911	287640.081	STAKE
345	3841485.867	287640.095	STAKE
346	3841469.403	287640.591	STAKE
347	3841454.113	287642.105	STAKE
348	3841471.205	287649.088	STAKE
349	3841487.306	287647.798	STAKE
350	3841502.92	287647.887	STAKE
351	3841503.545	287658.691	STAKE
352	3841483.557	287660.004	STAKE
353	3841502.412	287666.912	STAKE
354	3841502.17	287667.216	PT 354 CONTROL
355	3841564.692	287637.702	PT 355 CONTROL
356	3841563.582	287637.483	STAKE
357	3841550.679	287635.677	STAKE
358	3841534.585	287635.024	STAKE
359	3841544.697	287651.494	STAKE
360	3841556.775	287651.015	STAKE
361	3841570.032	287647.670	STAKE
362	3841585.443	287659.298	STAKE
363	3841566.866	287659.930	STAKE
364	3841549.364	287660.876	STAKE
365	3841588.124	287669.279	PT 365 CONTROL
369	3841660.525	287583.299	STAKE
370	3841646.248	287589.302	STAKE
371	3841651.868	287592.696	STAKE
372	3841660.863	287593.321	STAKE
373	3841650.142	287599.908	STAKE
374	3841619.606	287606.800	STAKE
375	3841629.422	287611.064	STAKE
376	3841595.595	287617.644	PT 376 CONTROL
379	3841556.061	287617.893	STAKE
380	3841573.972	287620.215	STAKE
381	3841590.75	287618.628	STAKE
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385	3841575.282	287629.112	STAKE
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387	3841586.188	287629.420	STAKE
388	3841599.842	287626.750	STAKE
389	3841615.621	287631.461	STAKE
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393	3841583.755	287635.630	STAKE
394	3841600.28	287638.363	STAKE
395	3841618.586	287642.278	STAKE
396	3841598.17	287647.715	STAKE
397	3841586.642	287647.311	STAKE
399	3841560.39	287672.837	STAKE

400	3841540.063	287675.202	STAKE
401	3841523.66	287671.805	STAKE
404	3841480.398	287431.880	PT 404 CONTROL
406	3841464.662	287466.269	STAKE
407	3841455.139	287471.962	STAKE
408	3841450.47	287480.989	STAKE
409	3841446.109	287488.422	STAKE
410	3841443.316	287495.121	STAKE
414	3841446.648	287555.964	STAKE
415	3841428.414	287553.619	STAKE



September 9, 2011

CH2M Hill / MCB Camp Lejeune / Navy Clean 1000 – CTO WE 41
Intrusive Investigation for Military Munitions response Program Sites UXO-02, UXO-11 and UXO-17
Field Procedures
Field Crew Staff: Glen Kitchen, Jason Boyles, John Baker
Dates: 08/08/2011 – 08/19/2011

Equipment:

- Trimble R8 GNSS receivers w/ integrated L1/L2 plus Glonass antenna
- Leica TPS 1200 Total Station / Topcon GTS 3B Total Station
- Nikon Level

All work performed under the direct supervision and control of North Carolina Professional Land Surveyors and except as noted, meets or exceeds the positional standards for "third-order class II" surveys. The datum for the project and deliverables is: NAD83(NSRS2007), NAVD88, UTM, Zone 18N, meters.

UXO-02 – Control Points were established using RTK GPS and utilizing the North Carolina Virtual Reference Network for real time corrections to the GPS. GPS solutions were verified by checking into existing NC Geodetic Survey Monuments. Each control point was set and checked with a minimum occupation time of three minutes and 180 epochs of data and checked with a additional occupation time of three minutes and 180 epochs plus a different satellite constellation. The positional accuracy of the control points met the standards for "third-order, class II" surveys. The dc files and raw data files for the conventional locations are included with this report. Each well was located horizontally via conventional survey methods and and vertically with level loop and turns on each well. Traverse for horizontal locations were closed loops exceeding 1:10,000 closure. The vertical location level loops had a closure exceeding Third Order accuracy.

UXO-11 – Control Points were established using RTK GPS and utilizing the North Carolina Virtual Reference Network for real time corrections to the GPS. GPS solutions were verified by checking into existing NC Geodetic Survey Monuments. Each control point was set and checked with a minimum occupation time of three minutes and 180 epochs of data and checked with a additional occupation time of three minutes and 180 epochs plus a different satellite constellation. The positional accuracy of the control points met the standards for "third-order, class II" surveys. The dc files and raw data files for the conventional locations are included with this report. Each well was located horizontally via conventional survey methods and and vertically with level loop and turns on each well. Traverse for horizontal locations were closed loops exceeding 1:10,000 closure. The vertical location level loops had a closure exceeding Third Order accuracy.

UXO-17 – Due to masking and un-favorable RTK GPS conditions, Control Points were established using Static GPS and Online Positions User Service (OPUS) post processing. Control points were established and the points tied together via conventional surveying methods. The Control points were used for all conventional traverse loops and vertical level loops. The post processing solutions did not meet Third Order accuracy requirements as noted in the SOW and CH2M Hill project manager was notified of possible solutions to meet the specifications. It was decided to accept the control point locations and the subsequent conventional surveys met the closure requirements for Third Order surveys. The dc files and raw data files for the conventional locations are included with this report. Each well was located horizontally via conventional survey methods and and vertically

CHARLOTTE NC

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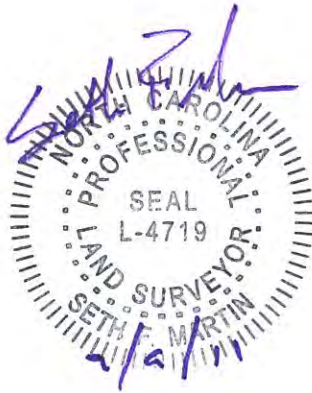
NASHVILLE TN

631 Second Ave South #100
Nashville, TN 37210
615.591.7164

VETERAN OWNED SMALL BUSINESS

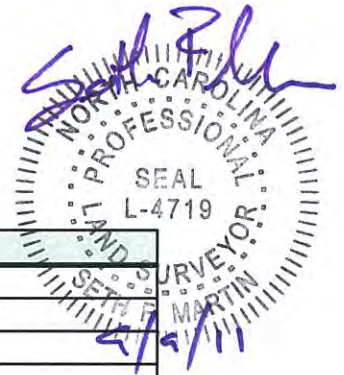
with level loop and turns on each well. Traverse for horizontal locations were closed loops and closure's exceeding 1:10,000. The vertical location level loops had a closure exceeding Third Order accuracy.

All horizontal locations for the Monitoring Wells were obtained through the use of conventional survey methods from the Control Points at each location. The vertical locations for the Wells were obtained through the use of "hard levels" with Control Point 101 used as the Benchmark.





N 36° - 09' - 15.33"
W 86° - 46' - 13.64"



All points UTM, Zone 18 North, NAD83, meters, NAVD88

Point # Northing Easting Elevation Description

UXO-2 Well Locations				
600	3828886.446	276900.133	6.601	GND
601	3828886.031	276900.589	7.526	LIP OF 2" PVC PIPE MR2-MW03
602	3828886.050	276900.601	7.440	LIP OF CASING
1000	3828577.331	277408.954	8.900	GND
1001	3828577.746	277409.239	9.670	LIP OF 2" PVC PIPE MR2 MW04
1002	3828577.726	277409.246	9.690	LIP CASING
1003	3828555.796	277040.497	2.800	GND
1004	3828556.292	277040.249	3.690	LIP OF 2" PVC PIPE MR2-MW05
1005	3828556.300	277040.223	3.670	LIP OF CASING
2000	3829329.140	277056.396	3.400	GND
2001	3829328.712	277056.196	4.140	LIP OF CASING
2002	3829328.689	277056.186	4.150	LIP 2" PVC PIPE MR2 MW-01
2003	3829127.490	277347.812	4.700	GND
2004	3829127.147	277348.190	5.490	LIP OF CASING
2005	3829127.097	277348.247	5.501	LIP OF 2" PVC PIPE MR2 MW-2

UXO-11 Well Locations				
3000	3846527.940	274668.697	5.913	GND
3001	3846527.570	274668.732	5.944	LIP OF CASING
3002	3846527.489	274668.763	5.782	LIP OF 2" PVC PIPE MR11-MW02
3003	3846486.941	274666.393	5.977	GND
3004	3846486.767	274666.773	6.008	LIP OF CASING
3005	3846486.671	274666.788	5.785	LIP OF 2" PVC PIPE MR11-MW01
3006	3846526.857	274759.065	5.816	GND
3007	3846526.669	274759.386	5.849	LIP OF CASING
3008	3846526.581	274759.408	5.648	LIP OF 2" PVC PIPE MR11-MW05
3009	3846554.344	274730.574	5.977	GND
3010	3846554.036	274730.621	6.002	LIP OF CASING
3011	3846553.984	274730.658	5.749	LIP OF 2" PVC PIPE MR11-MW03
3012	3846606.233	274759.970	5.453	GND
3013	3846606.166	274760.355	5.486	LIP OF CASING
3014	3846606.102	274760.401	5.316	LIP OF 2" PVC PIPE MR11-MW04

UXO-17 Well Locations				
4000	3841589.720	287470.166	8.239	LIP OF 2" PVC PIPE MR17-TW16
4001	3841589.721	287470.137	8.190	LIP OF CASING
4002	3841589.905	287469.619	7.422	GND
4003	3841602.970	287498.101	7.023	GND
4004	3841603.788	287498.065	7.873	LIP OF 2" PVC PIPE MR-17 TW18
4005	3841603.821	287498.049	7.818	LIP OF CASING
4006	3841619.451	287492.917	6.699	GND
4007	3841619.725	287491.877	7.541	LIP OF 2" PVC PIPE MR-17 TW17
4008	3841619.728	287491.837	7.480	LIP OF CASING
4009	3841660.597	287503.500	5.438	GND
4010	3841660.393	287503.858	6.568	LIP OF 2" PVC PIPE MR-17-15 OLD MARK
4011	3841660.411	287503.834	6.571	LIP OF CASING

Appendix D

Geophysical Investigation Reports

GPR
MAGNETICS
ELECTROMAGNETICS
SEISMICS
RESISTIVITY
UTILITY LOCATION
UXO DETECTION
BOREHOLE CAMERA
STAFF SUPPORT

GEOPHYSICAL INVESTIGATION REPORT

Focused Preliminary Assessment/Site Inspection Former Firing Position 2 Marine Corps Base Camp Lejeune, North Carolina

Dates of Investigation:

September 23rd – 28th, 2008

FINAL SUBMITTAL

October 31st, 2008

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Plate

Plate 1: EM61-MK2A Bottom Coil Site Mosaic

Appendices

Appendix A:	GPO Color Contour Maps
Appendix B:	Root Cause Analysis for Data Gaps
Appendix C:	Example EM61-MK2A QC Tests
Appendix D:	CD-ROM containing EM61-MK2A Data, Grid Maps, Target Lists

1 INTRODUCTION

NAEVA Geophysics, Inc. was contracted by CH2M HILL to conduct digital geophysical mapping (DGM) of the former Firing Position 2 at Marine Corps Base (MCB) Camp Lejeune, North Carolina. The site is located east of Piney Green Road and north of the current base landfill and the area of investigation consists of a four acre tract encompassing Firing Position 2. Field operations were conducted from September 23rd to Sept. 28th, 2008.

The objective of the investigation was to locate Munitions and Explosives of Concern (MEC) within the former Firing Position 2 area resulting from historic use of the site as a firing point for 105mm and 155mm Howitzer projectiles. Prior to the commencement of mapping, a Geophysical Prove-Out (GPO) was completed for the purpose of establishing an appropriate anomaly targeting threshold and to demonstrate the effectiveness of the geophysical operations.

2 METHODS

A Geonics EM61-MK2A in wheel mode using fiducial markers for positioning was used to map the majority of the area. A smaller portion of the site was mapped using an EM61-MK2A combined with a Trimble R8 Real Time Kinematic (RTK) GPS base station and a Trimble R7 receiver radio.

Data were referenced during collection with file names containing the grid name of the southwest corner of the designated grid block. To ensure efficient collection and full coverage, tape measures were placed along each side of a grid setup and ropes with marks painted every 0.75 m were stretched across the grid at intervals of 10 meters. A 50 meter Universal Transverse Mercator (UTM) grid system was pre-established and used for QC checks of the RTK GPS. In areas of the site where numerous trees and thick vegetation obstructed the RTK GPS, measuring tapes and ropes were pulled from grid corners and measurements were triggered by an odometer wheel, with fiducial markers placed at known intervals along each line. The geophysical data were collected along E-W oriented lines.

All daily logs, field notes, and GPS QC points were input digitally into a HP IPAQ PDA using Microsoft Excel software. Survey Area Reports were completed on a paper form and later scanned in .jpeg format. At the end of each day, the forms were uploaded for use in preprocessing the geophysical data.

2.1 Geonics EM61-MK2A Background

The EM61-MK2A is a time-domain electromagnetic instrument designed to detect, with high spatial resolution, shallow ferrous and non-ferrous metallic objects. The applicability of the instrument for MEC detection has been widely demonstrated in UXO technology demonstrations at the U.S. Army Aberdeen Proving Grounds. Scoring reports for the EM61-MK2 employed various environments can be found at the U.S. Army Environmental Command UXO Technology Demonstration Program website at <http://aec.army.mil/usaec/technology/uxo01f.html>. The instrument consists of two air-cored coils (1 m x 0.5 m), batteries, processing electronics, and a digital data recorder. The larger of the two coils functions as the EM transmitter and receiver and is positioned below a second receiver coil. Secondary currents induced in both coils are measured in millivolts (mV). For this survey, the EM61-MK2A was set up to collect data from 4 time gates (channels) from the bottom coil.

The EM61-MK2A was operated in wheel mode with the bottom coil 40 cm above the ground surface. The EM61-MK2A data were recorded with an Allegro CX data logger and Geonics NAV61MK2 acquisition software, set to record data at a rate of 10 Hz. When not using RTK, a reading was triggered by the odometer wheel every 20 cm.

2.2 Trimble R8 Real Time Kinematic Global Positioning System

Trimble's R8 RTK GPS is a 74-channel dual frequency RTK receiver that uses both L1 and L2 satellites. This system operates with a Trimble R8 base station and a Trimble R7 rover unit; the base sends corrections to the rover via radio link, thus maintaining a 3cm horizontal accuracy and a 5cm vertical accuracy. For integration with the EM61-MK2A, the rover is set to output a GGA NMEA string at 1 Hz, which is captured real time by the NAV61MK2

program and temporarily stored in the Allegro CX.

3 GEOPHYSICAL PROVE-OUT (GPO)

The purpose of surveying a GPO is to demonstrate the effectiveness of all instrumentation, methods, and personnel prior to the initiation of fieldwork. Serial number identification was recorded for all instrumentation (i.e. data logger, coils, EM61-MK2A electronics), and the GPO was mapped using the same personnel, equipment, and methodologies employed for the DGM survey.

The GPO was located at the north end of the base near Knox Park. The dimensions were 40 feet by 200 feet. Though the UTM coordinate system in meters was used at the former Firing Position 2 site, the GPO was originally established in survey feet and it was mapped using the US State Plane coordinate system. A survey line spacing of 2.5 ft was used, the same as for the mapping of the former Firing Position 2 site. This spacing results in coil overlap on successive lines, reducing the likelihood of data gaps and improving the chance of detecting small MEC items. The GPO had been seeded for previous work at MCB Camp Lejeune, so a background survey was not performed. The GPO was mapped twice, once using GPS positioning and once by odometer with fiducial markers placed every 25 feet.

Processed data from Channel 2 were presented and selected for use in processing the data from the Firing Position 2 area. Color contour maps of EM61-MK2A Channel 2 data from both the RTK and fiducial survey of the GPO with a targeting threshold of 3 mV are included in Appendix A. All GPO data can be found in the GPO folder on the included CD-ROM.

The site history of having been used as a Howitzer Firing Position, which used 105mm and 155mm projectiles, led to a target threshold of 3 mV in Channel 3 being selected in concurrence with the CH2M HILL Project Geophysicist for the site DGM.

4 FIELD DATA ACQUISITION

The mapped area of the former Firing Position 2 (the “site”) is approximately 4 acres. Approximately 20% of the site was open but the rest was sparsely to thickly covered with trees (see Figure 1). A steep berm ran through the middle of the site on a SW to NE direction (see Figure 2). Near the center of the site was a raised mound with a deep trench on the NE side of the mound. The site was grubbed of vegetation and small trees prior to mapping, and the topography ranged from flat in the open areas to steep on the berms and an isolated trench. One section on the eastern side of the site was strung with concertina wire (see Figure 3), which prevented DGM operations.

Data gaps are defined in the project Data Quality Objectives (DQOs) as any down-line gap larger than 2 feet, or when less than 98% of possible readings are collected along a line. Additionally, line spacing variance greater than 20% of the specified spacing constitutes a gap. Gaps in the data appear around either obstructions, such as trees, or around topographic features like mounds, trenches, and cultural features. In grid block F5D6D1 uneven terrain contributed to antennae tilting which resulted in some data gaps higher than the DQO’s specifications. These terrain induced gaps are addressed in the Root Cause Analysis (see Appendix B).

Major cultural and topographic features were documented using field notes and are noted on the grid maps.

5 QUALITY CONTROL DATA

To establish confidence in the data reliability, Quality Control (QC) tests were conducted throughout the project. Tests were conducted prior to, during, and after all data collection sessions but the DGM field team neglected to conduct midday QC test for the initial two days of field activities. An examination of the morning and afternoon QC tests showed instrument data quality objectives were met on those days despite not having performed the midday QC tests. After this omission was pointed out QC test were completed before and after all datasets. All QC tests for the EM61-MK2A were conducted after a minimum 15 minute

warm-up period for the electronics. Sample graphical displays of such QC data are included in Appendix C. All quality control data are included on the enclosed CD-ROM in Appendix D.

5.1 QC Test Descriptions and Acceptance Criteria

1. **GPS Check:** Prior to data collection, the GPS antennae was mounted on top of a pole and placed over a grid stake of known coordinates. The reported position was compared to the actual location to check proper resection results. Positions within 10 cm were accepted.
2. **Personnel Test:** A personnel test was conducted each day with the coil in a stationary position. The test included briefly logging background response and then logging the response while one team member operated the equipment and the other walked in the vicinity of the coil. The purpose was to demonstrate that clothing or objects carried by personnel had no effect on instrument response.
3. **Cable Shake Test:** Prior to beginning data collection, data were recorded with the coil held in a stationary position and the cables and connections were tested for possible shorts by shaking them. The operator monitored the response for any spikes during the process.
4. **Static Background / Spike Test:** A location identified as having minimal response was designated as a calibration point. Readings were collected in a stationary position to ensure a stable response. Data were collected for a period of one minute with no object placed on the coil. After this, a section of metal pipe was placed on the ground and the instrument response was observed. Data were recorded for one minute with the pipe in place. The pipe was then removed, and static readings continued for an additional minute. This test was performed at the beginning and end of the day, as well as between data sets (excluding the first two days of DGM, as mentioned in Section 5) to establish that the instrument was functioning properly, as indicated by a stable and repeatable response with no spikes or other anomalous activity. A repeatable response within $\pm 20\%$ after background correction was acceptable.

5. **Latency Test:** Following the each static test, the same section of pipe used in the static test was placed on the ground and data were collected as the instrument was moved back and forth along a line over the object. The proper latency and lag between the peak response of the instrument and the reported item location was then determined. When responses generated by an object merge as a single anomaly, the correct latency has been applied.
6. **Six-Line Test:** On the first day of data collection, a six-line test was conducted along a 30-foot line near the GPO. Line 0 was collected heading north with no test object, Line 1 to the south (along the same line) with no test object. Lines 2 and 3 followed the same pattern, though with a section of pipe placed at the midpoint. With the test object still in place, line 4 was collected to the north at a faster than normal pace, and Line 5 was collected to the south at a slower than normal pace. Acceptable criteria were peak response amplitude $\pm 20\%$ and positional accuracy to ± 20 cm.
7. **Repeat Data:** Upon completion of the original collection of a data set, approximately 2% of the dataset was re-collected as a check of instrument repeatability and positioning. Since small deviations in line path can greatly affect instrument response, repeat lines were evaluated qualitatively rather than quantitatively.

5.2 QC Test Results

QC data were evaluated using Geosoft's QA/QC software. Static, spike, cable shake, and personnel test profiles were plotted with an acceptance criterion of ± 2 mV from the mean. Any readings outside this range were flagged on the profiles and an associated failure percentage was reported.

1. **GPS Check:** All daily checks of GPS positioning accuracy were within 10 cm.
2. **Personnel Test:** No deviation from background response was observed.
3. **Cable Shake Test:** No spikes were observed in any of the tests.
4. **Static Background / Spike Test:** Static and spike tests were within acceptance criteria; stable, repeatable, and without spikes.

5. **Latency Test:** Latency tests were plotted showing the line path and response amplitude and were within tolerance.
6. **Six-Line Test:** Latency corrected profiles were plotted to evaluate the effect of movement speed on response repeatability and positioning accuracy. Both amplitude and positioning were within tolerance.
7. **Repeat Data:** Repeat lines generally showed good repeatability upon visual inspection, though due to the difficulty of walking identical line paths, some lines deviated slightly in response and positioning.

6 DATA PROCESSING

The geophysical data were stored in an Allegro CX data logger and then downloaded into a laptop computer for review and editing. Using Geomar's TrackMaker software, .xyz files were created incorporating the GPS positional information. When data were collected using the fiducial method, Geonics' DAT61MK2 software was used to position the data using line numbers and station increments. Once in-field review was completed, the data were transferred to NAEVA's Charlottesville, Virginia office for preprocessing, analysis/target selection, and final map production. Geosoft's Oasis Montaj software package was employed to process and contour the raw data, and to identify and characterize potential MEC targets by isolating peak amplitude responses.

6.1 Preprocessing

Converted raw data files were imported into Geosoft's Oasis Montaj to perform the following:

- Conversion of local coordinates (if collected without GPS) to projected UTM coordinates
- Evaluation of data density
- Application of auto leveling and instrument drift corrections
- Application of default lag correction
- Generation of preliminary contour map(s) from gridded data
- Generation of formatted ASCII files containing preprocessed data by grid block

6.2 Final Processing

After completion of preprocessing, the data were further evaluated and processed to generate final processed data files. Final processing steps included:

- Evaluation and refinement of auto leveling and instrument drift corrections
- Evaluation and refinement of lag correction
- Additional digital filtering and enhancement, as necessary
- Targeting of data, as described below
- Splitting datasets into grid blocks and individual 50 m x 50 m grid files
- Generation of formatted ASCII files containing processed data by grid block
- Generation of final maps for each grid showing contoured, gridded data and target locations.
- Generation of .xls target lists and .ply files containing points for SRA boundaries.

6.3 Analysis and Target Selection

The UX-Detect module within Oasis Montaj identifies peak amplitude responses associated with, but not limited to, MEC items. Single-source anomalies may generate multiple target designations depending on shape and orientation. Initial target selections were made based on the gridded data. Data profiles corresponding to the anomalies selected by Geosoft were then analyzed by trained geophysicists, with the targets evaluated as to their validity and position. Targets found to be invalid or incorrectly located were removed or adjusted. Additionally, anomalies that were not selected by the UX-Detect module, yet deemed to represent a potential MEC target, were manually selected. All target selection was performed on final processed data from Channel 3 of the bottom coil of the EM61-MK2A.

Final processed XYZ (ASCII) files were created by grid block, and individual geophysical maps and target lists were created for 50 m x 50 m grids, denoted by the SW corner of each grid. All anomalies that occurred at or above the targeting threshold of 3 mV were identified using a unique ID number. Each target list provides a Target ID, Grid Cell ID, Easting (x) and Northing (y) UTM (NAD83, Zone 18N, meters) Grid Plane coordinate location for each target, the recorded peak response in millivolts, and comments. The target IDs were prioritized by designating the highest amplitude response as the number one target in each grid.

Data delivery reports are included on the CD, with information on all steps of the survey from raw to processed data including field survey forms, processing methods, and processor comments.

7 RESULTS

Within the total surveyed area, targets were selected at a threshold of 3 mV in Channel 3, which resulted in a total number of 1310 targets. See Plate 1 for the color contour mosaic of the entire site, showing the grid system, anomaly distribution, and major topographic and cultural features.

Saturated response areas (SRA's) were polygoned and there are a total of 21 SRA's at the site. These SRA's are noted at the end of the target lists with first point and a reference to the .ply file containing all polygon points for the SRA.

The berm and mound areas contain the highest concentration of anomalies, especially in grids F5D6E2, F5D6F2, F5D6G2 and F5D6G3, which had three SRA's in each grid. Some anomalies are large in both response amplitude and size, indicating large pieces of metal close to the surface. Reinforced concrete and metal debris were observed on the surface in these areas, which may indicate the presence of similar construction-related debris in the subsurface. As former Firing Position 2 was a firing point rather than an impact area, these anomalies could also represent larger munitions debris, such as projectile casings, that might be expected at such a site. In open areas away from the berms in grids F5D6E2 and F5D6F2 (see maps for approximate line) there are comparatively few anomalies.

Grids F5D6G1 and F5D6G2 also contain high concentrations of anomalies in open areas far away from any berms and mounds. While some metal debris was observed on the surface there is not a noticeable concentration of metal near these locations.

Since there were no power lines or other utilities near the site cultural noise levels were quite low, allowing confident selection of low amplitude anomalies. Any suspected noise anomalies likely originated from stumps of trees striking the EM61-MK2A coil, which can create spikes in the data. However, these readings are often out of phase, and during the processing stage can be identified as not originating from metal in the ground.

The ability to detect MEC items can be limited by the presence of larger objects hiding or masking smaller objects. In areas with large metallic objects the probability of detection decreases but despite the presence of SRA's all four QC seed items were found within a 1m radius in agreement with the data quality objectives (verified for NAEVA by the CH2M HILL QC Geophysicist.)

All raw, preprocessed, and processed EM61-MK2A data, EM61-MK2A QC data, contoured maps and target lists for all grids, as well as a copy of this report are included on the CD (with accompanying readme.txt) in Appendix D.



Figure 1: Open southern area with berms and woods in the backgrounds



Figure 2: Wooded area with berm



Figure 3: Concertina wire in eastern area of the site

Plate

Plate 1: EM61-MK2A Bottom Coil Site Mosaic

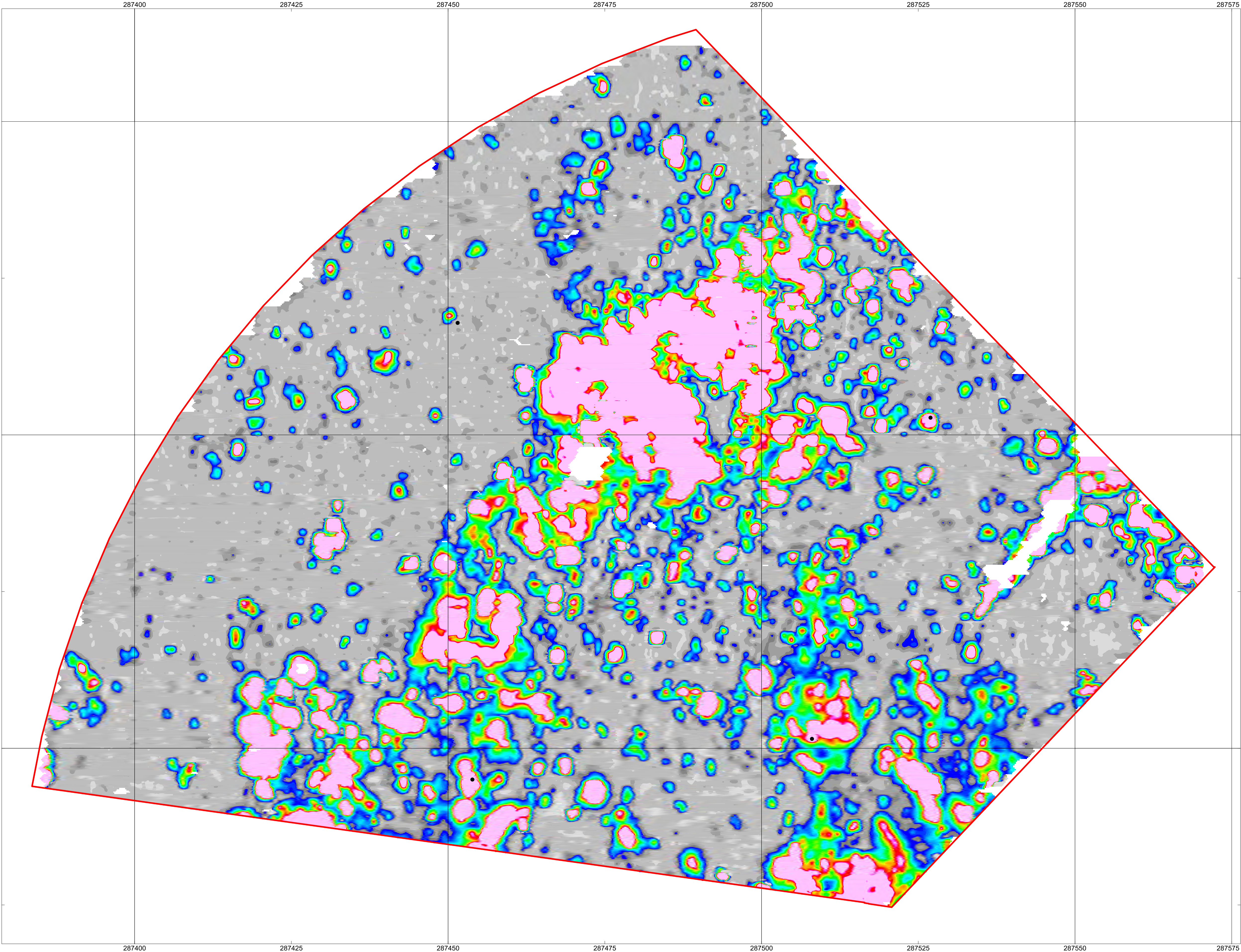
Appendices

Appendix A: GPO Color Contour Maps

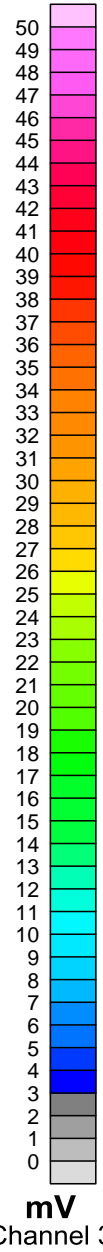
Appendix B: Root Cause Analysis for Data Gaps

Appendix C: Example EM61-MK2A QC Tests


Appendix D: CD-ROM containing EM61-MK2A Data, Grid Maps, Target Lists



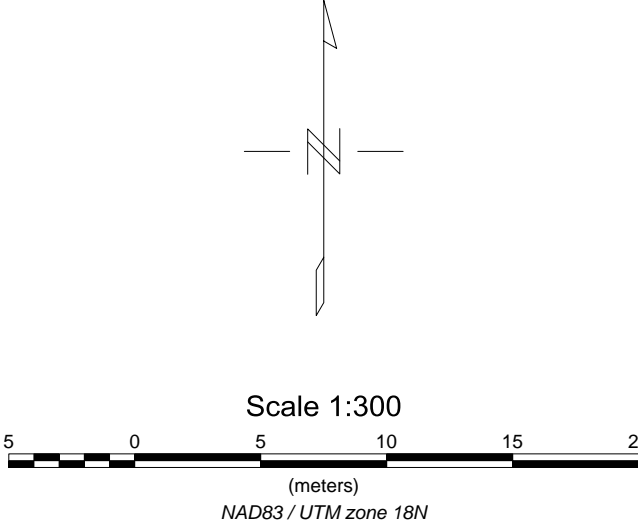
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F5D6E2	F5D6E3	F5D6F3	F5D6G3	F5D6H3
F5D6D2	F5D6E2	F5D6F2	F5D6G2	F5D6H2
F5D6D1	F5D6E1	F5D6F1	F5D6G1	F5D6H1



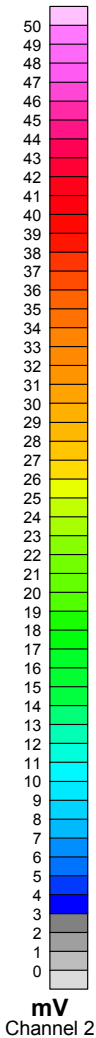
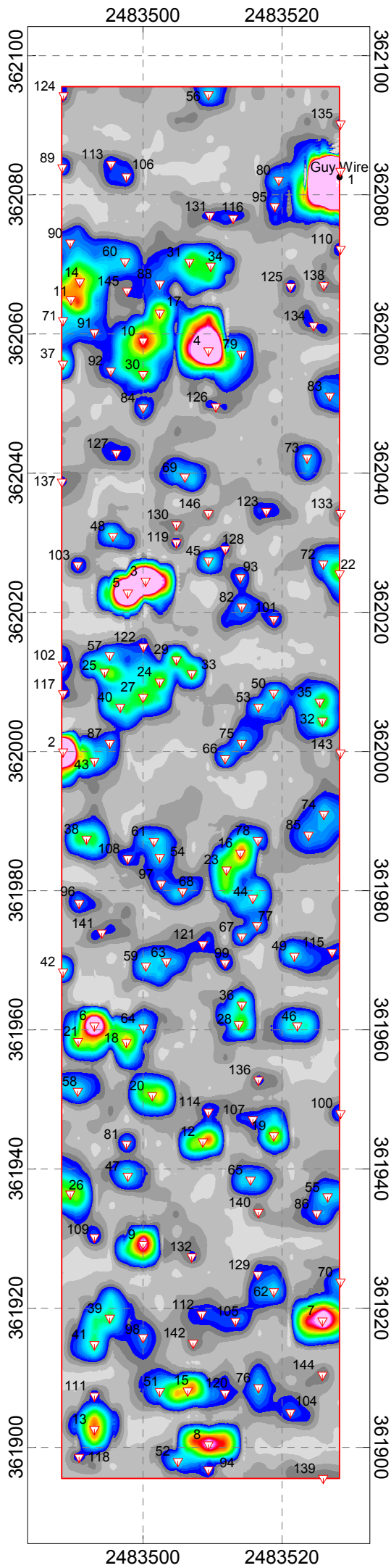
Legend

 Area of Investigation

NOTE: See individual maps for information (target locations, culture, SRA, etc.)

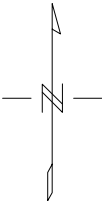


Client: CH2M HILL
EM61 MK2 Bottom Coil Mosaic Former Firing Position 2 Proposed MARSOC MILCON Area Marine Corps Base, Camp Lejeune, North Carolina
Date of Survey: 09/24-28/2008 Date of Map Creation: 10/02/2008
Map Approver: J. Guillard



Legend

- Grid Boundary
- Culture
- Selected Target
(See Target Pick List For Response and Location)



Scale 1:240



US survey foot

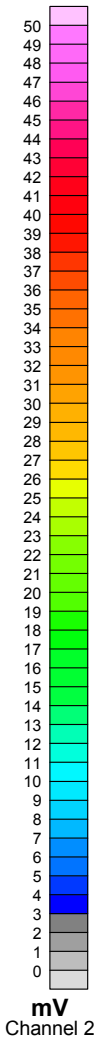
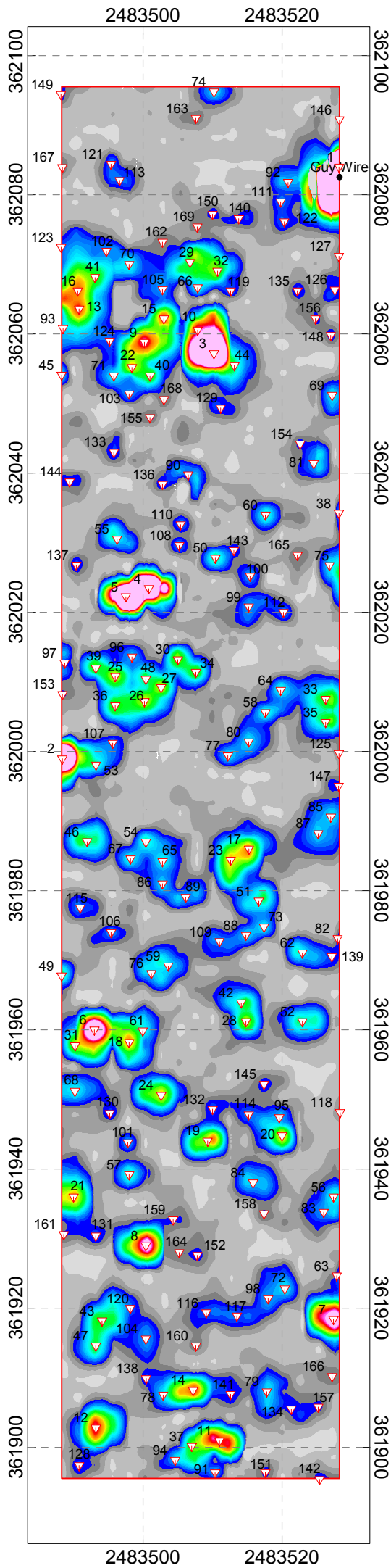
NAD83 / North Carolina CS83

Client: CH2M HILL

EM61 MK2 Bottom Coil
Block GPOFID Grid GPOFID
Firing Position 2 TO-09
Marine Corps Base, Camp Lejeune, North Carolina

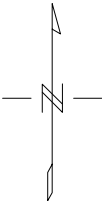
Date of Survey: 09/23/2008
Date of Map Creation: 09/24/2008

Map Approver: K.Lemley



Legend

- Grid Boundary
- Culture
- Selected Target
(See Target Pick List For Response and Location)



Scale 1:240



US survey foot

NAD83 / North Carolina CS83

Client: CH2M HILL

EM61 MK2 Bottom Coil
Block GPORTK Grid GPORTK
Firing Position 2 TO-09
Marine Corps Base, Camp Lejeune, North Carolina

Date of Survey: 09/23/2008
Date of Map Creation: 09/24/2008

Map Approver: K.Lemley

GPR
MAGNETICS
ELECTROMAGNETICS
SEISMICS
RESISTIVITY
UTILITY LOCATION
UXO DETECTION
BOREHOLE CAMERA
STAFF SUPPORT

Root Cause Analysis

Digital Geophysical Mapping
Firing Position 2
MCB Camp Lejeune, North Carolina

Date: October 16, 2008

To: Tamir Klaff, Principal Project Manager/Munitions Response Geophysicist

Cc: Rob Bulford, Site Geophysicist; John Breznick, Program Manager

From: Karen Lemley, Geophysical Project Manager

RE: Data Collection Failure to achieve Data Quality Objectives (DQO's)

Event Description

On September 27, 2008 the data quality objective (DQO) for footprint coverage was not met for Grid Block F5D6D1. The DQO coverage criterion as stated in the Draft Munitions Response Program Master Project Plan for Marine Corps Base Camp Lejeune dated December 2007 is that the lane spacing will not vary more than ± 20 percent of the specified spacing of 0.75m, allowing for a maximum footprint of 0.9 meters. NAEVA's QC failed to identify that the DQO was not met prior to the data being submitted to CH2M HILL.

Root Causes

There were one root cause and one causal factor that led to the DQO failure and the submittal of the deficient data. The root cause was NAEVA's project team failure to fully read and understand the DQO's as stated in the Work Plan (WP). This not being fully understood led to the causal factor that was an error in the decision to operate the EM61MK2 on wheels instead of in tandem (stretcher) mode. When the EM61MK2 is operated on wheels with the GPS, the antennae is position approximately 4 feet above the bottom coil, thus causing antennae tilt as the instrument traverses uneven ground. Therefore the actual GPS locations are not an accurate representation for the footprint of the EM61MK2. After the data was processed, the lack of understanding of the WP caused the additional issue that the failure to meet the DQO was not identified prior to the data being submitted.

Data Validity Analysis

For Grid Block F5D6D1, at the specified coverage of 0.9m in the DQO's, 98.31% of the grid block was covered and with a 1 meter footprint which is the footprint of the instrument, 99.60% of the grid block was covered. Figure 1 is a map depicting the coverage at these different footprint widths.

To show that the data with 98.31% footprint coverage is still adequate to detect all Munitions and Explosives of Concern (MEC), a previous collection of the same Geophysical Prove Out (GPO) as used for Firing Position 2 was analyzed. The majority of

MARYLAND
4707 Benson Ave.
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Maryland 21227
(410) 536-7600
(410) 536-7602 Fax

NEW YORK
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Suite 11
Congers
New York 10920
(845) 268-1800
(845) 268-1802 Fax

VIRGINIA
P.O. Box 7325
Charlottesville
Virginia 22906
(434) 978-3187
(434) 973-9791 Fax

the items buried in the GPO are smaller (hand grenades and 20mm) than the items of interest at Firing Position 2 (105mm and 155mm). The GPO was collected in November 2006, prior to the current DQO requirements. The DQO coverage requirement at that time stated the following:

- The DQO for lane spacing is to maintain appropriate lane spacing to provide 100 percent coverage of the survey area at sufficient density to detect all detectable MEC items. The measurement performance criterion for this is that the lane spacing varies no more than ± 20 percent of spacing specified in the sampling design. This will be evaluated during the GPO by verifying that all of the DGM data collected and used for anomaly selection meets this standard.

Using the current DQO required coverage footprint of 0.9m, NAEVA detected the required number of items with coverage of 94.63%. Figure 2 depicts the achieved coverage footprint. The percentage covered in the GPO from November 2006 was 3.68% less the percent covered in Grid Block F5D6D1.

Corrective Actions for Current Data

Since the GPO collected on November 14, 2006 passed with a higher percentage of gaps than data for Grid Block F5D6D1 and the suspected MEC in the survey area are larger than the items buried in the GPO, the data is considered acceptable. Therefore no corrective actions are recommended.

Recommended Corrective Action for Future Work

To help ensure that this issue does not arise again in the future the following corrective actions are recommended:

- The Project Development Team (PDT) will review DQO's prior to mobilization to ensure that all parties involved fully understand the requirements.
- The field crew will be fully prepared to collected data with whichever method (wheel or tandem) is determined to be most suitable to achieve the required DQO's.
- Once the field crew is onsite, prior to collection of the GPO, the survey area will be evaluated to determine the best method (wheel or tandem) for collection.
- If necessary, the line spacing will be tightened to ensure that the DQO's are met.
- NAEVA suggest changing the coverage DQO to allow for the full footprint of the coil (1 meter).

Comparison of data gaps in Block F5D6D1 with different coverage foot prints.

(NOTE: Percentage covered excludes documented gaps.)

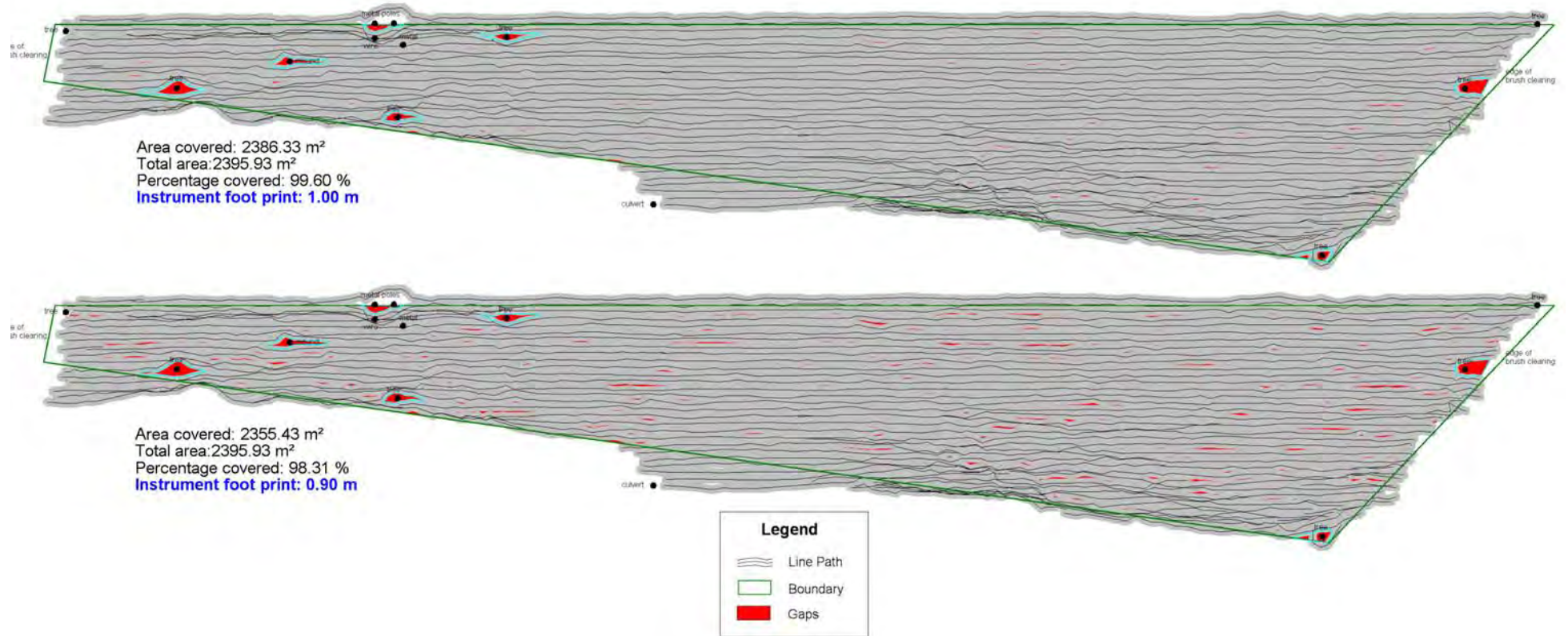
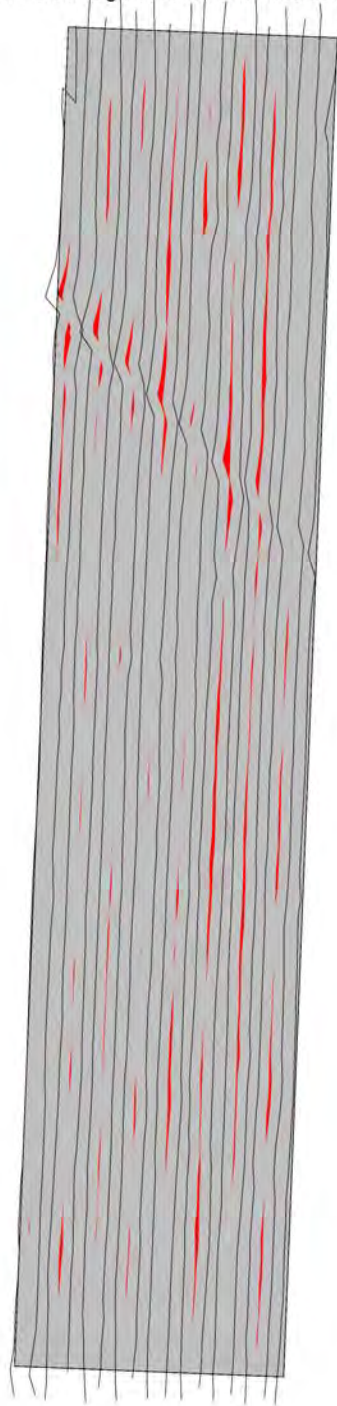


Figure 1: F5D6D1 Data Gaps Comparison

Data gaps in GPO Collected November 14, 2006

(NOTE: Percentage covered excludes documented gaps.)



Area covered: 703.28 m²
Total area: 743.21 m²
Percentage covered: 94.63 %
Instrument foot print: 0.90 m

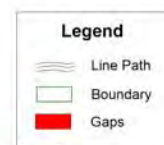



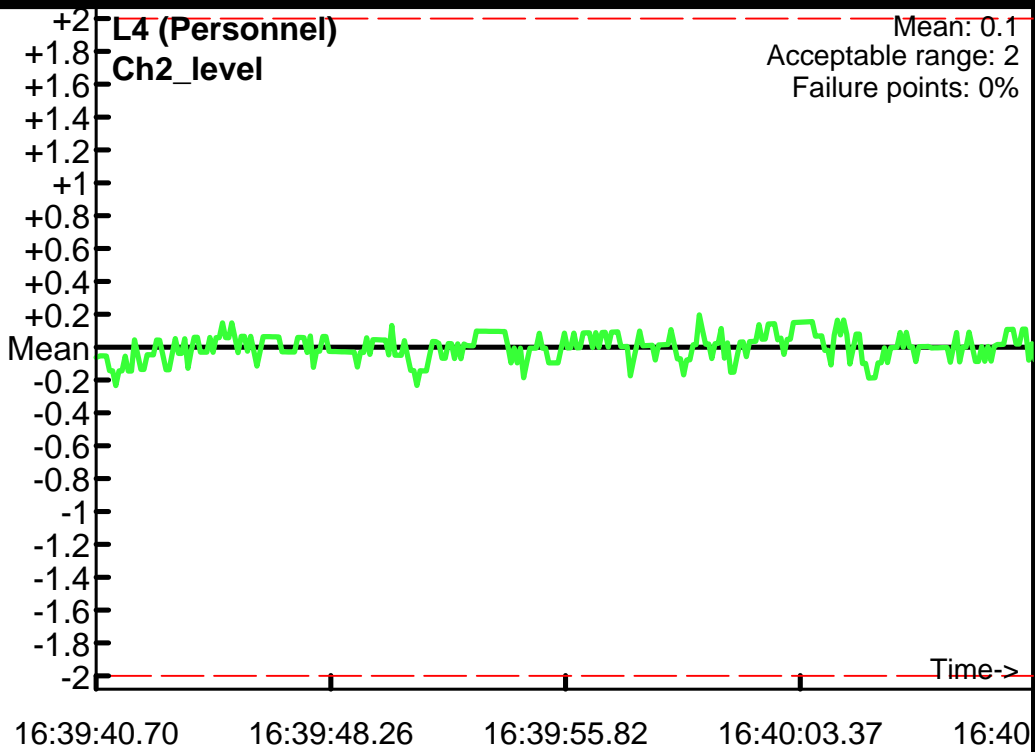
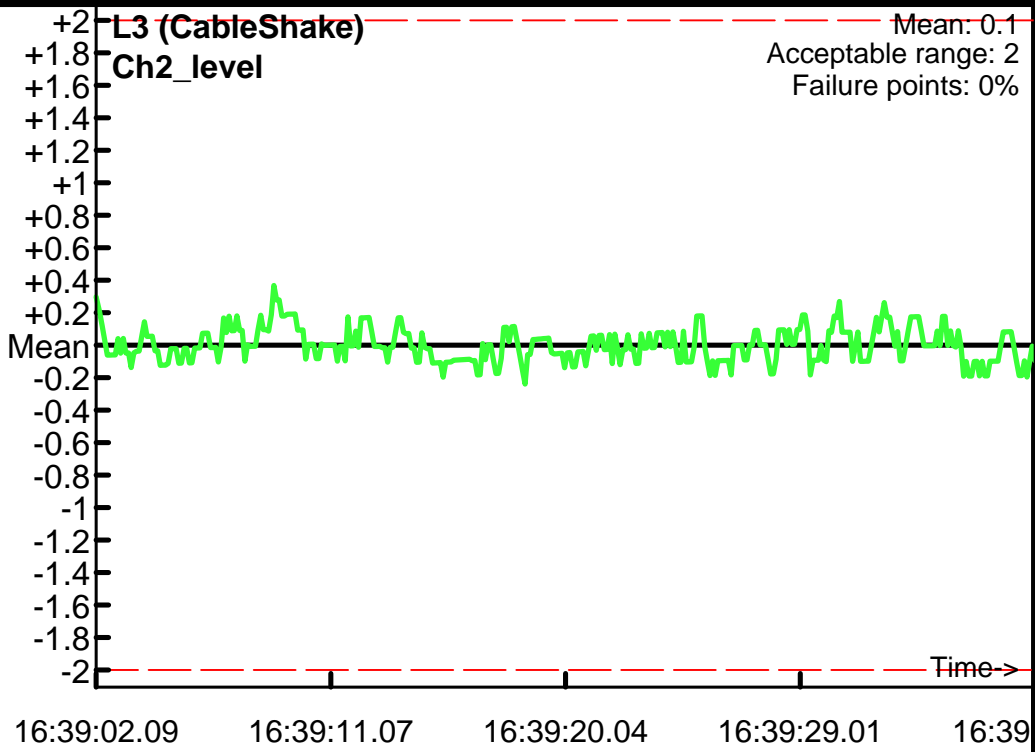
Figure 2: Data Gaps in GPO Collected 11/14/06

Cable Shake and Personnel Test

Project: Firing Position 2 TO-09 Camp Lejeune
Equipment: EM-61 Mark II
Grid/Location: Localized QC Area


Instrument Threshold: 20%
 Outside range
— — — Acceptable limits

AM test
Operator: GeoA
Date: 2008/09/23

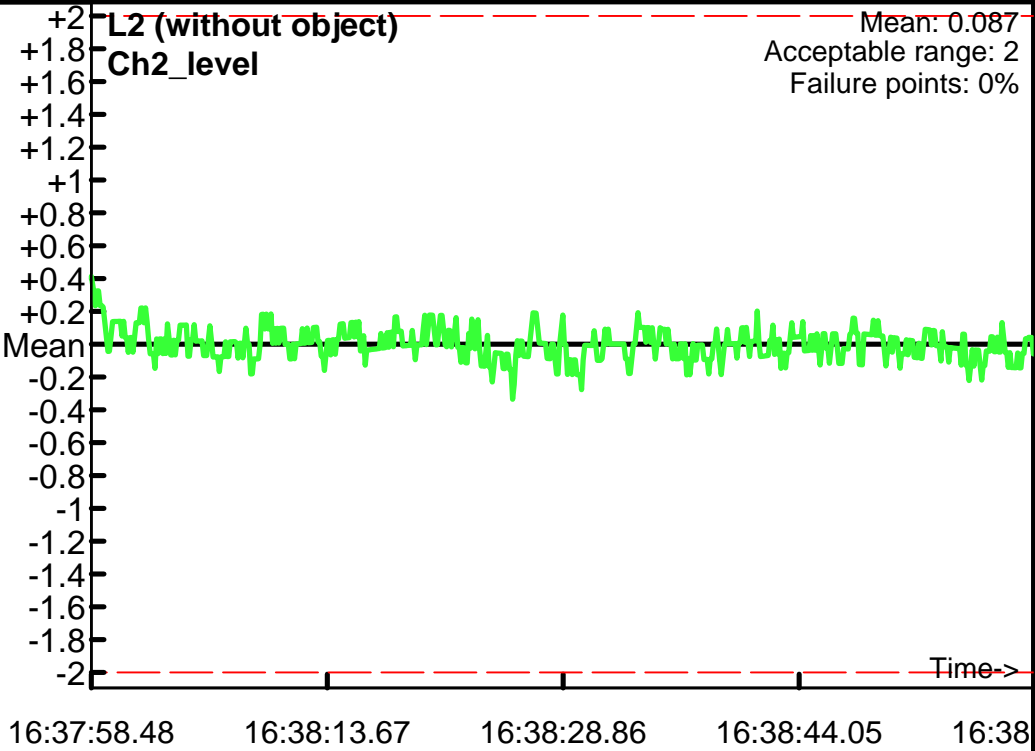
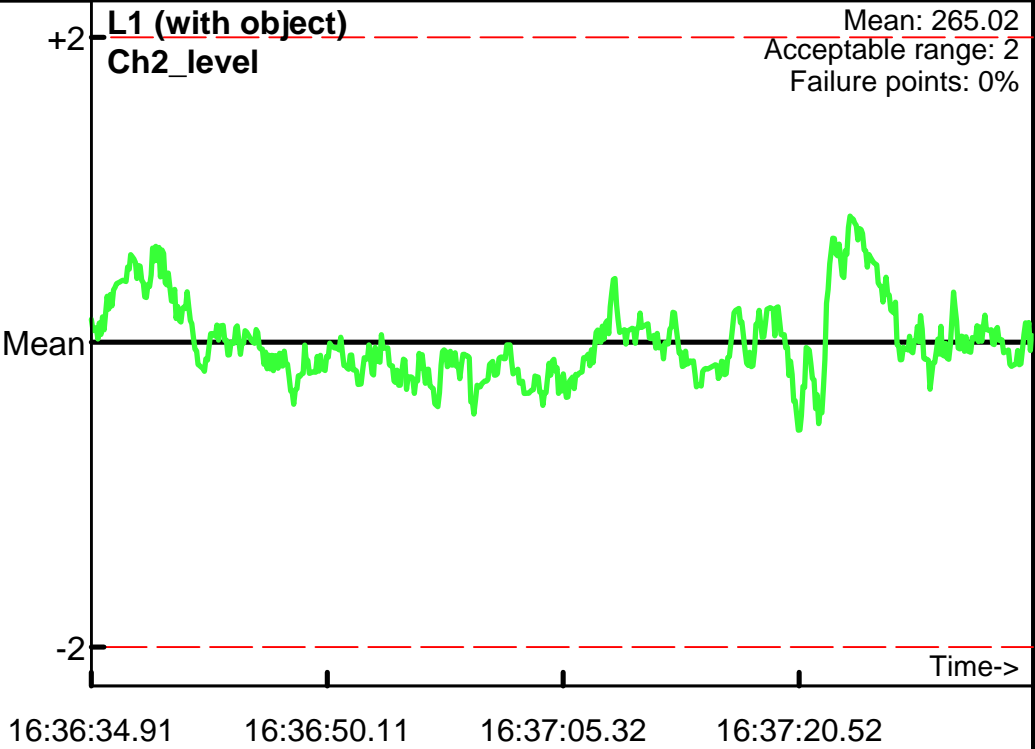
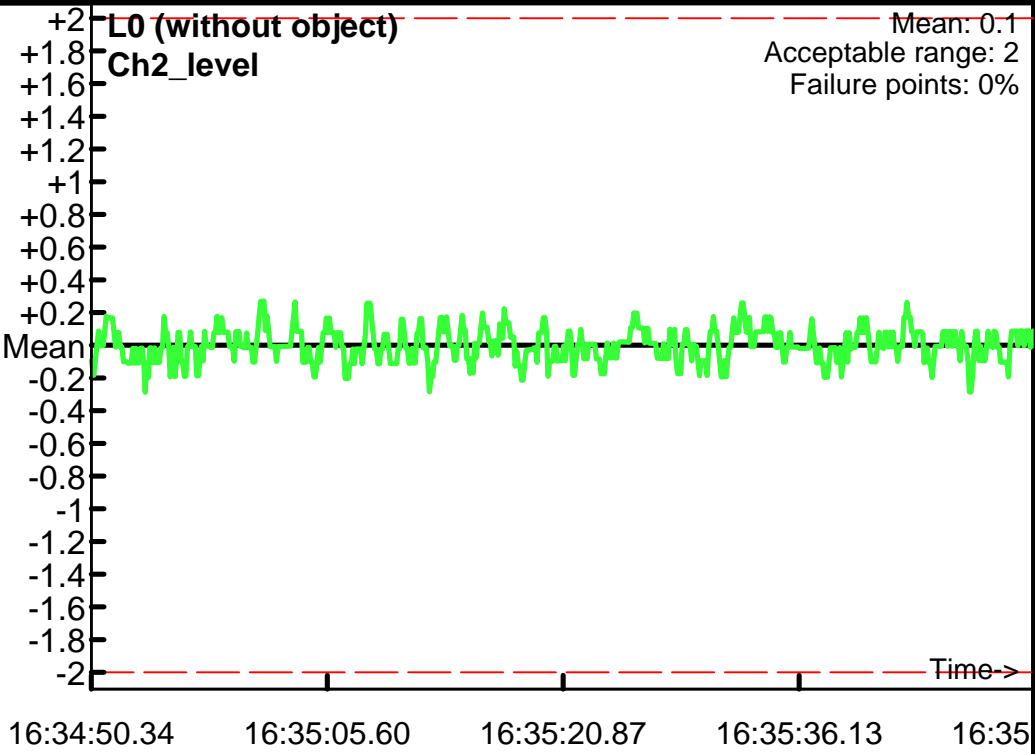


Static Calibration Test

Project: Firing Position 2 TO-09 Camp Lejeune
Equipment: EM-61 Mark II
Grid/Location: Localized QC Area

Instrument Threshold: 20%
 Outside range
Acceptable limits

AM test
Operator: GeoA
Date: 2008/09/23



Dynamic Response Test

Previous Profiles

Reference Profile

Comparison Profile

△ Top:First/Bottom:Second Profile

▲ Target Value <= Tolerance

▲ Target Value > Tolerance

▲ No Data at Target

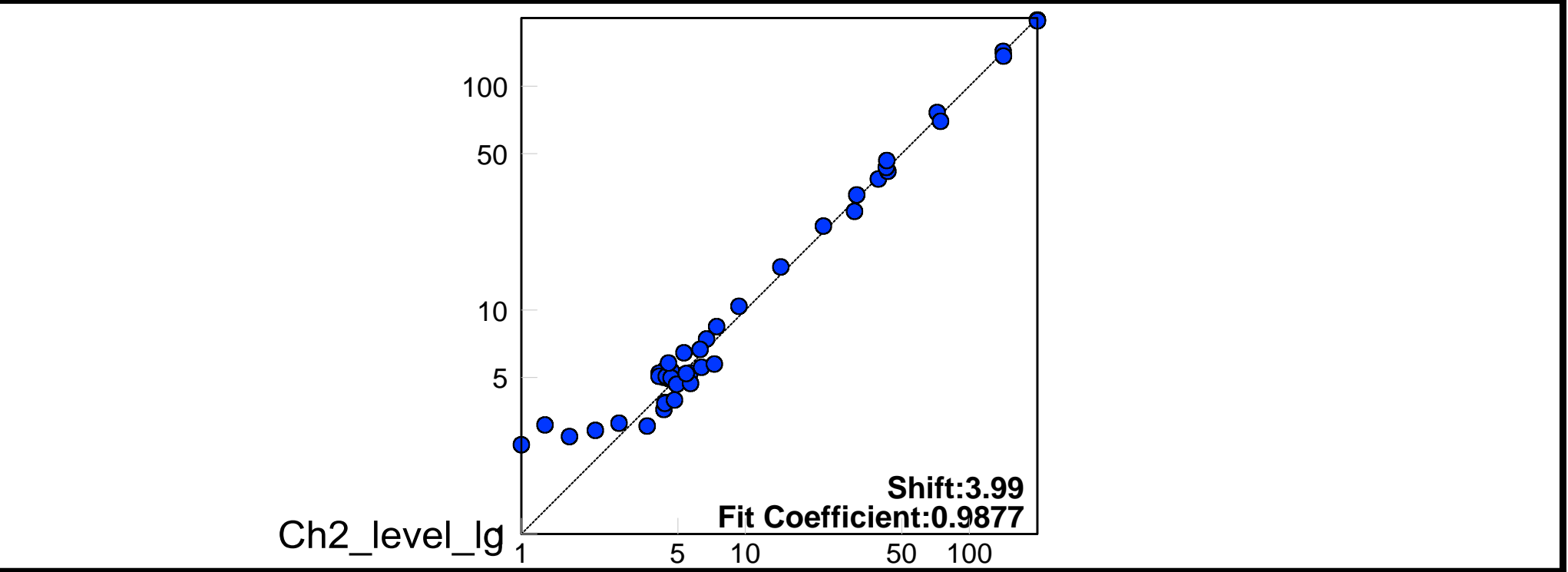
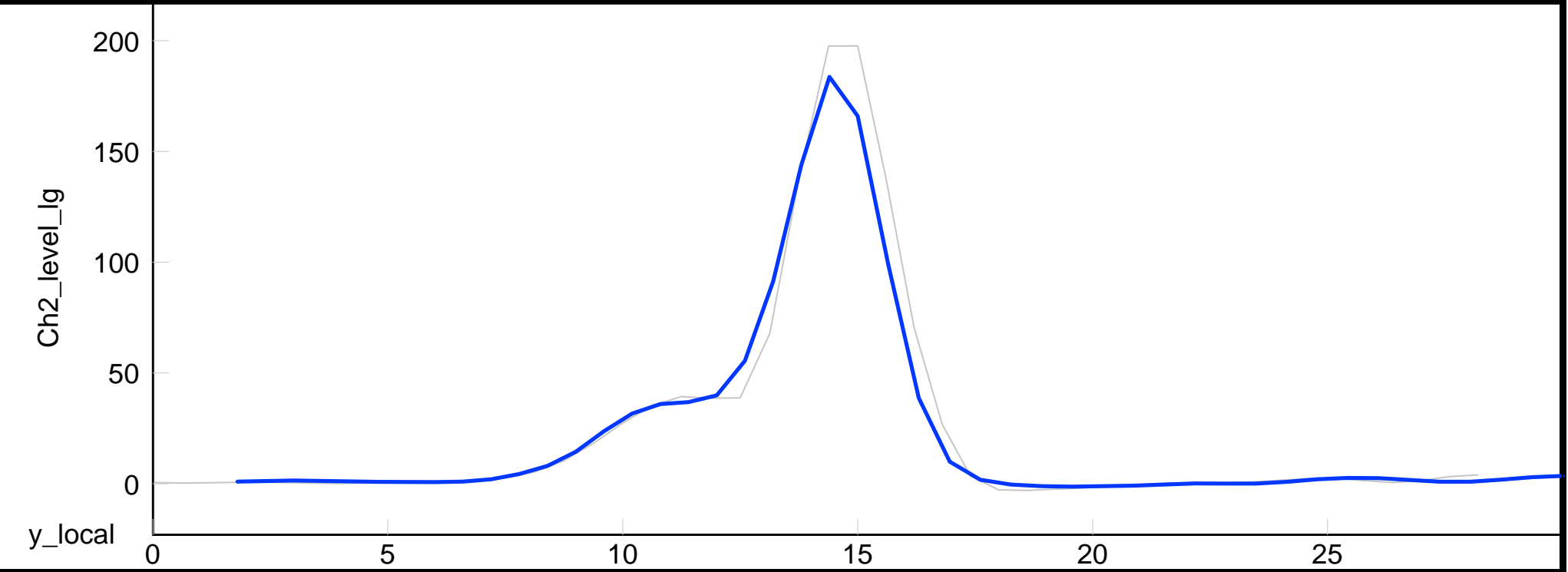
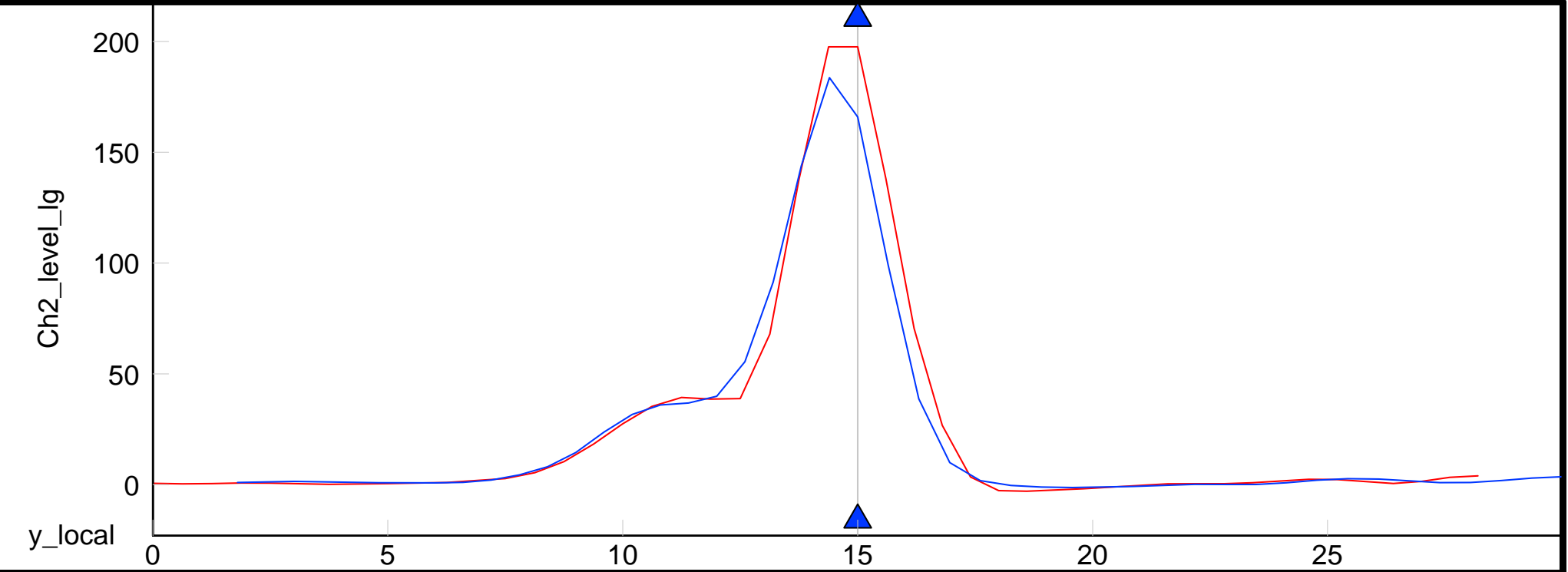
Peak Tolerance(Value): 20(%)

Operator: GeoA

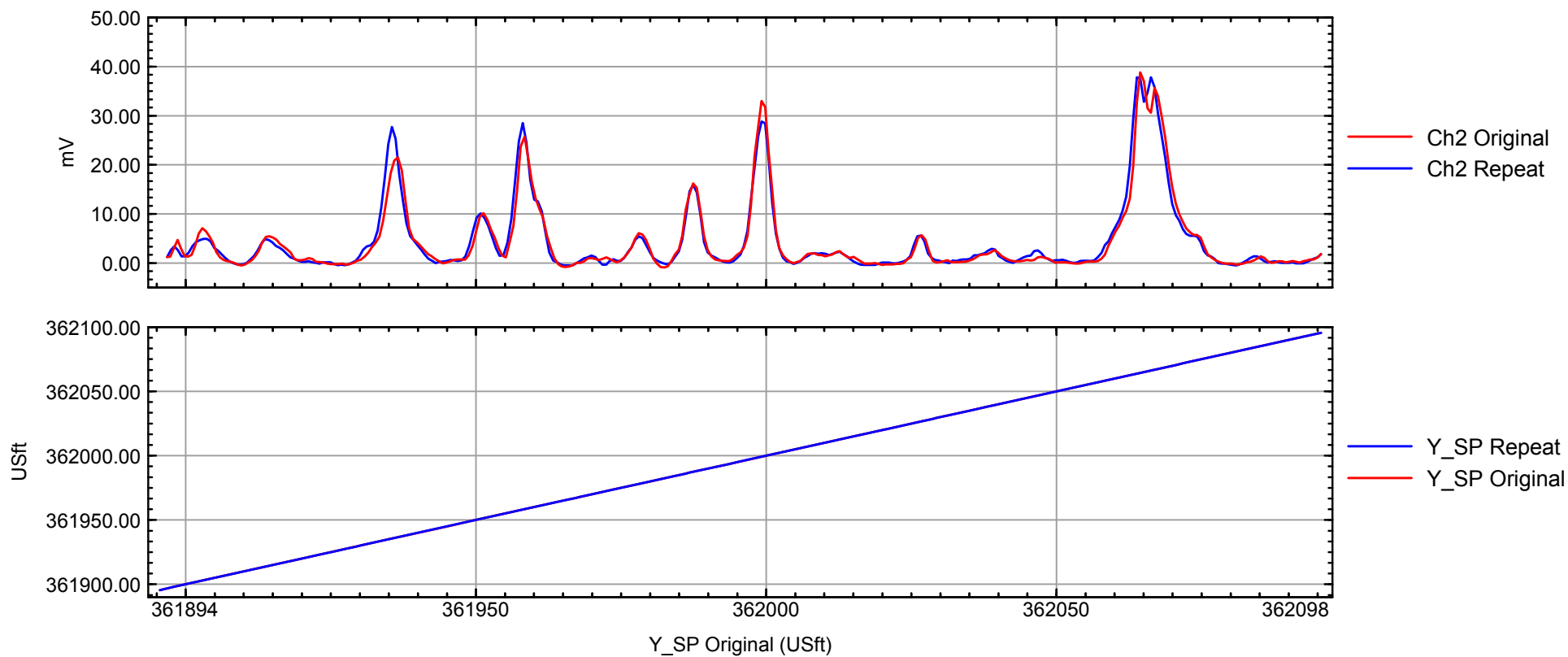
Project: Firing Position 2 TO-09 Camp Lejeune

Equipment: EM-61 Mark II

Grid/Location: Localized QC Area



Firing Position 2 TO-09 - Camp Lejeune, North Carolina - Block GPOFID EM61MK2 Repeat Line 2.5



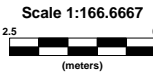
Six Line Test

MAP
6 line test

LEGEND

- Normal Pace
- Normal Pace
- Normal Pace with object
- Normal Pace with object
- Fast Pace with object
- Slow Pace with object
- Target position
- Lateral tol. exc.

Proposed distance lag = -0.310
Proposed time lag = -0.086 sec

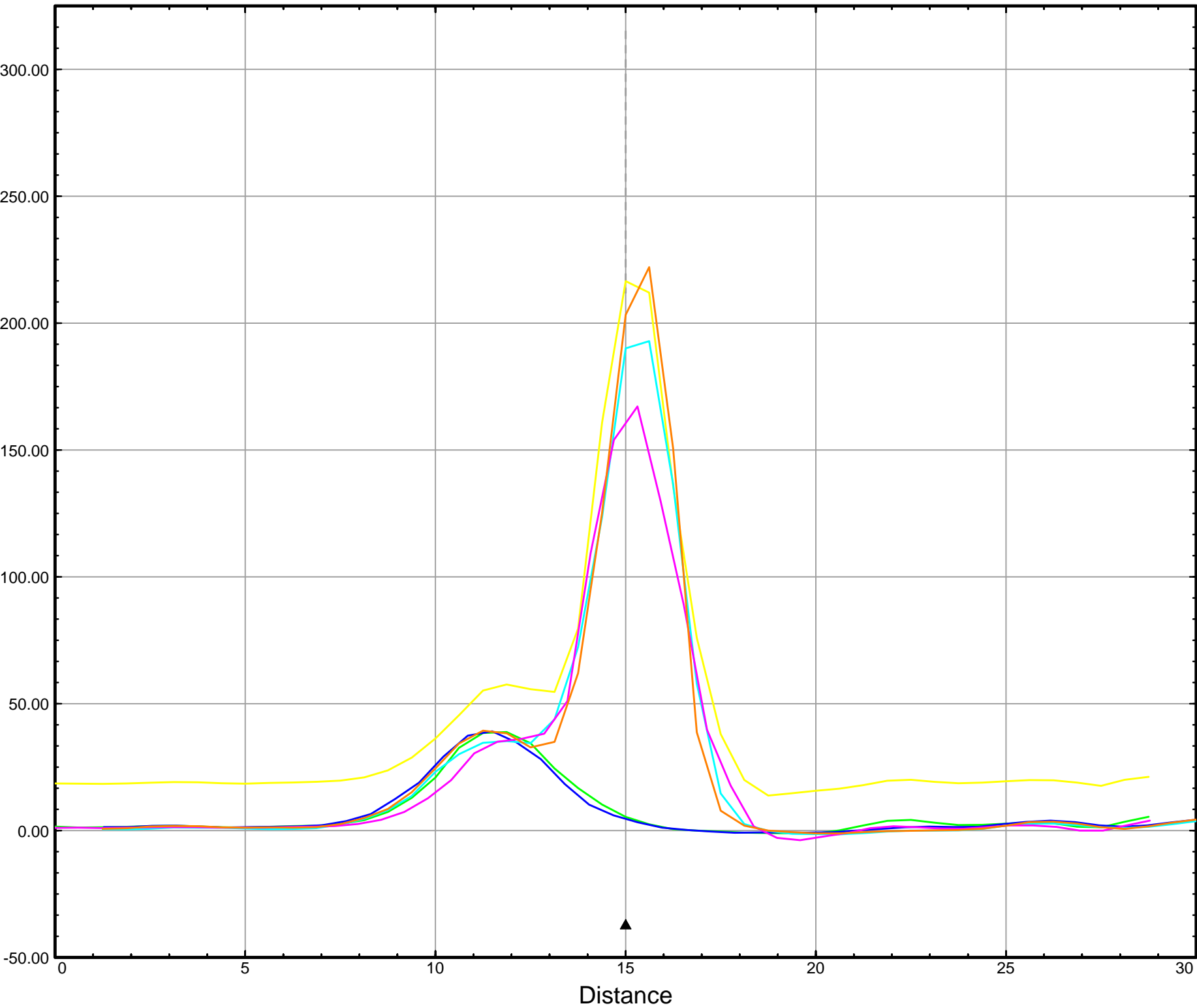


Map Scale:



Client: CH2M HILL
Project: Firing Position 2 TO-09 Camp Lejeune
Contractor: NAEVA Geophysics

Date: 09/23/2008 File: 0923SIXLINEFID_6LineTest



GPR
MAGNETICS
ELECTROMAGNETICS
SEISMICS
RESISTIVITY
UTILITY LOCATION
UXO DETECTION
BOREHOLE CAMERA
STAFF SUPPORT

Geophysical Investigation Report

Expanded Site Inspection

Site UXO-17

Former Firing Position 2

Marine Corps Base Camp Lejeune, North Carolina

Contract Task Order 141

Dates of Investigation:
November 16th – 17th, 2010

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APPENDIX A. IVS RESULTS

APPENDIX B. SAMPLE DAILY QC PROFILES

APPENDIX C. CD-ROM CONTENTS

Acronyms and Abbreviations

AHA	Activity Hazard Analysis
ASCII	American Standard Code for Information Interchange
bgs	below ground surface
CD	Compact Disk
cm	centimeter
CTO	Contract Task Order
DGM	digital geophysical mapping
DQO	data quality objective
EM	electromagnetic
ESI	Expanded Site Inspection
FTP	File Transfer Protocol
GIP	Geophysical Investigation Plan
GPO	geophysical prove-out
GSV	Geophysical System Verification
ISO	industry standard object
IVS	Instrument Verification Strip
m	meter
MCB	Marine Corps Base
MEC	munitions and explosives of concern
mm	millimeter
MRSIMS	Munitions Response Site Information Management System
mV	millivolt
NAD83	North American Datum of 1983
NAEVA	NAEVA Geophysics, Inc.
OSHA	Occupational Safety and Health Administration
PA/SI	Preliminary Assessment/Site Investigation
QC	quality control
SAP	Sampling and Analysis Plan
SOP	Standard Operating Procedure
UTM	Universal Transverse Mercator
UXO	unexploded ordnance

1 INTRODUCTION

1.1 Background and Objectives

During the dates of November 16th and 17th of 2010, NAEVA Geophysics, Inc. (NAEVA) performed digital geophysical mapping (DGM) for CH2M HILL under Contract Task Order (CTO) 141 as part of an expanded site inspection (ESI) at Site Unexploded Ordnance (UXO)-17 Firing Position 2 on Marine Corps Base (MCB) Camp Lejeune, North Carolina. Historic land use research by CH2M HILL reported that between the years 1950 and 1985 Site UXO-17 was a firing position for various munitions as large as 155 millimeter (mm) projectiles, raising risk for the presence of surface and buried residual munitions and explosives of concern (MEC). Prior to the safe expansion of the base landfill into Site UXO-17, it was necessary to characterize the extent of contamination in unstudied areas through geophysical mapping and data analysis. The analysis produced figures relaying quantity, distribution, and density of electromagnetic (EM) anomalies that represent possible MEC-related subsurface metal (CH2M HILL, 2010a).

1.2 Scope of Work

NAEVA provided qualified personnel and necessary equipment for the execution of CTO 141 Geophysical Investigation Plan (GIP) found in Section 6 of the Sampling and Analysis Plan (SAP) (CH2M HILL, 2010b). Two Field Geophysicists (GeoA) worked on site with support of the Project Geophysicist, Quality Control (QC) Geophysicist and Geophysical Data Processor at NAEVA's Charlottesville, Virginia office. CH2M HILL's Project Manager and UXO Technician provided onsite logistics, UXO avoidance assistance, and Health and Safety Plan administration.

Key work performed includes:

- Instrument Verification Strip (IVS) installation;
- Daily instrument calibration and verification;
- Data acquisition along spaced transects totaling ~10% of site area;
- Quality control of data at all steps of the project;
- Maintenance of project documentation within the Munitions Response Site Information Management System (MRSIMS);
- Data processing and target anomaly selection;
- Reporting and delivery.

1.3 Site Location and Description

MCB Camp Lejeune is an active military installation located southeast of Jacksonville, North Carolina. Site UXO-17 is one of several sites on base undergoing inspection in support of current operations. Site UXO-17 is a geometrically circular area comprising of 16 acres, and lies north of the operating base landfill. Of the 16 acres, a 4-acre subset was the subject of an earlier preliminary assessment and site investigation (PA/SI) in 2008. The remaining 12 acres were the focus of this investigation, of which approximately 1.2 acres of ~10m spaced transects were determined to be sufficient to evaluate the number and density of anomalies that represent potential subsurface MEC. The data collected from the transect survey can be extrapolated out to provide an estimate of the anomaly density across the entire site. The site can be accessed from Piney Green Road and Old Bear Creek Road (**Figure 1**) (CH2M HILL, 2010b).

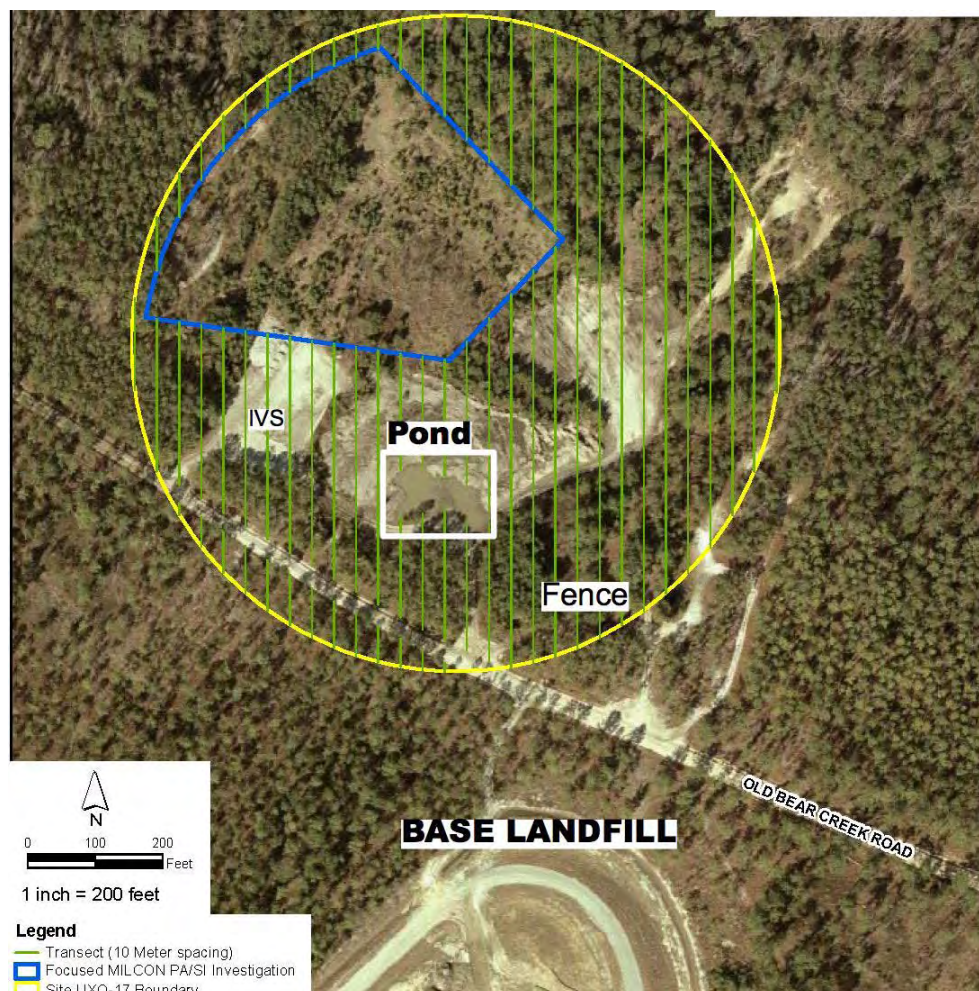


Figure 1. Site UXO-17 proposed transects.

2 EQUIPMENT

2.1 Geonics EM61-MK2

The geophysical instrument used for the investigation at Site UXO-17 is the Geonics EM61-MK2 metal detector. The EM61-MK2 is a high resolution time-domain electromagnetic instrument designed to detect, with high spatial resolution, shallow ferrous and non-ferrous metallic objects. In comparison with other metal detectors, especially magnetometers, it is much better suited for work in close proximity to man-made structures and in areas of dense subsurface metallic debris (i.e., burial pits).

The EM61-MK2 system used for this project consisted of one 1 meter by 0.5 meter air-cored coils, a digital data recorder, batteries and processing electronics. The EM61-MK2's transmitter generates a pulsed primary magnetic field, which then induces eddy currents in nearby metallic objects. The receiver measured the secondary magnetic field generated by the eddy currents at four intervals in the bottom coil (Geonics, 2005). Earlier time gates provide enhanced detection of smaller metallic objects. Secondary voltages induced in both coils are measured in millivolts (mV). The arrangement of coil is such that there is a vertical separation of 42 centimeters (cm) from the ground to the bottom coil. Assuming accurate data positioning, target resolution of approximately 0.5 meters can be expected. The data are collected using either Geonics' EM61MK2 or Geomars' Nav61 program, depending on grid conditions, and temporarily stored in a Juniper Allegro CX data logger prior to downloading to a laptop computer. During periods of light rain on November 16, waterproofing of cable connections and electronics unit was necessary.

2.2 Data Logger

A Microsoft Windows based Allegro CX data logger was used to monitor and record EM data. The data was recorded in four time gates or channels, geometrically spaced in time after the termination of the transmitter pulse. The Allegro stores raw data in the .R61 format (Geonics Limited 2005).

2.3 Information Management

Project documentation, including instrument serial numbers and data file names was recorded in the UXO-17 MRSIMS forms on a Palm Treo mobile device provided by CH2M HILL. Completed field forms were synced to the MRSIMS Master database and posted to

the CH2M HILL file transfer protocol (ftp) site for further QC review and use during data processing and reporting.

3.0 METHODOLOGY

3.1 DGM Survey Activities

MEC surface clearance, vegetation removal, and land survey activities were completed at Site UXO-17 in advance of DGM operations. Transects were nominally spaced 10m apart over the site based on the specified coverage goal of ~10% (1.2 acres) area. NAEVA began DGM production starting at the eastern most transect (T1) and worked westward. For each transect, the instrument was positioned at the starting stake location with the long axis perpendicular to the intended line path. The operator then proceeded to pull the instrument from stake to stake stopping at the last accessible stake, creating a 1 meter wide swath. The process was repeated with the next series of stakes until all transects were covered. Data readings were automatically recorded at 10cm wheel intervals. Transects generally laid in a north-south direction (see **Figure 2**).

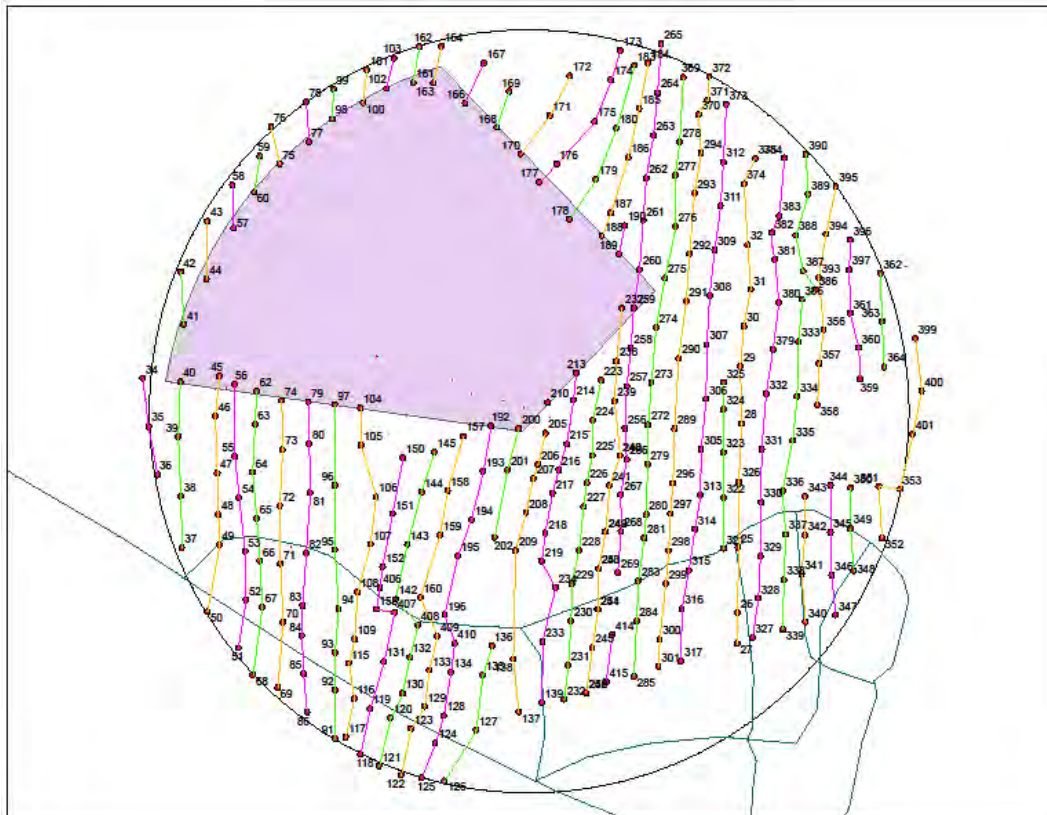


Figure 2. Map displaying stake identification numbers and transect paths.

Data were positioned using the fiducial method. The operator depressed the fiducial button as the coil's center passed over each marked stake, affectively marking the stake location in the data. **Figure 3** shows an operator collecting data along one of the transects. Notes were recorded for each transect, documenting filename, line name, culture comments and all associated stakes in order of collection. Using notes, marks in the data were then fitted to corresponding North American Datum 1983 (NAD83) Universal Transverse Mercator (UTM) coordinates. All data points in between stakes were transformed with respect to the known positions.



Figure 3. Data acquisition along Transect 27 (T27) approaching Stake 64.

3.2 Data Processing and Interpretation

EM61-MK2 data were temporarily stored in an Allegro CX data logger using Geonics' EM61-MK2 software and then downloaded into a laptop computer for further on-site processing using Geonics' DAT61MK2. Initial data processing was performed by the field team. This included reviewing data for integrity, repeatability, and completeness. Once in-field review was completed, the data were transferred to NAEVA's Charlottesville, Virginia office for preprocessing, analysis/target selection, and final map production using Geosoft's Oasis Montaj.

3.2.1 Pre-Processing

Converted raw data files were imported into Geosoft's Oasis Montaj to perform the following:

- Review and finalize all QC tests (cable shake, personnel, and static) prior to processing DGM data for that day;
- Conversion of raw coordinates to projected NAD83 UTM Zone 18 North coordinates using meters by matching fiducial marker locations with surveyed control points provided by a licensed land surveyor;
- Evaluation of data density;
- Application of auto leveling and instrument drift corrections for EM61-MK2 data;
- Application of a default lag correction based on the lag determined from the initial collection of the 5 line IVS;
- Generation of preliminary contour map(s) from gridded data;
- Generation of preliminary original versus repeat profiles by grid block;
- Generation of formatted American Standard Code for Information Interchange two (ASCII) files containing preprocessed data by grid block.

3.2.2 Final Processing

After completion of preprocessing, the data were further evaluated and processed to generate final processed data files. Final processing steps included:

- Evaluation and refinement of auto leveling and instrument drift corrections for EM61-MK2;
- Application of heading correction to magnetic data, if needed;
- De-spiking of magnetic data, if needed;
- Evaluation and refinement of lag correction;
- Additional digital filtering and enhancement, as necessary;
- Targeting of data, as described below;
- Generation of formatted ASCII files containing processed data by grid block;
- Generation of final maps for each grid or block showing contoured, gridded data, target locations, areas of interest and culture;
- Generation of final original versus repeat profiles by grid block.

3.2.3 Analysis and Target Selection

The target anomaly threshold was set at 3mV in channel 2 for consistency with precedents at Camp Lejeune. The UX-Detect module within Oasis Montaj identifies peak amplitude responses associated with, but not limited to, MEC items. Single-source anomalies may generate multiple target designations depending on shape and orientation. Initial target selections were auto-selected using a peak picking algorithm based on the Channel 2 profile data. Data profiles corresponding to the anomalies selected by Geosoft were then analyzed by trained geophysicists, with the targets evaluated as to their validity and position. Targets found to be invalid or incorrectly located were removed or adjusted. Additionally, anomalies that were not selected by the UX-Detect module, yet deemed to represent potential MEC targets, were manually selected. All selected anomalies that

occurred at or above the targeting threshold of 3 mV were identified using an ID number. All targets were selected from final processed Channel 2 data of the EM61-MK2 bottom coil.

3.2.4 Deliverables

Final processed XYZ (ASCII) files for Site UXO-17 were created by block, and individual target lists were created for each transect. Each target list provides a Target ID, Grid Cell ID, Easting (X1) and Northing (Y1) UTM coordinate location for each target, and the recorded peak amplitude in mV as shown in **Table 1** below.

ID	GRIDCELLID	X1	Y1	TYPE	AMPLITUDE	UNITS
15	T27	287418	3841515.9	2	49	mV
16	T27	287418	3841520.4	1	11585.9	mV

Table 1. Sample target list.

The target IDs were assigned by numbering the targets with increasing IDs starting from south end of each transect. All target lists and both raw and processed data have been submitted to CH2M HILL's geophysicist and can be found on the attached CD-ROM in Appendix C. Also included are processing reports, a copy of the MRSIMS database, and target lists in MRSIMS format.

4 RESULTS

4.1 Summary of Work

NAEVA started work at Site UXO-17 on November 16, 2010 and finished on November 17, 2010. NAEVA installed an onsite IVS for QC and verification of the EM61-MK2 system. Transect data were collected, processed, and reviewed. Raw data, processed data, final data, associated reports, and target lists were delivered to CH2M HILL in specified formats.

4.2 Mobilization and Site Setup

Prior to mobilization an Activity Hazard Analysis (AHA) and Standard Operating Procedures (SOPs) were provided to CH2M HILL, and all personnel had 40-hour Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) training, with current (annual) 8-hour refresher training, as well as First Aid and Cardiopulmonary Resuscitation (CPR) training.

NAEVA mobilized one field crew to Camp Lejeune on November 15th, 2010. An IVS was established at UXO-17 on November 16th with data collection also beginning on the same day.

Transect lanes were cleared of vegetation and surface MEC to allow access for survey work and safe passage of a DGM system. Vegetation removal paths deviated from proposed transects where terrain and culture prohibited safe passage. Following vegetation removal, wooden stakes were professionally surveyed at regular intervals along the lanes, serving as reference points for data positioning during DGM. Stakes were color-coded and given sequential identification numbers specific to each transect (**Figure 2**).

Site-specific health and safety briefs were given each morning by the AGVIQ-CH2M HILL site manager. No equipment was staged on site.

4.3 DGM Survey Activities

A total of 656 anomalies were selected above the targeting threshold of 3 mV in Channel 2 from the 53 transects collected, covering an area of 1.08 acres. These transects were collected within three datasets: T02, T12 and T24. The average target density across the site is 607 targets per acre. Target distribution is evenly spread across the site. However, as see in Plate 1, in the east and north portions of the site there are large areas of high amplitude anomalies that appear to cross multiple lines. Within some of these areas, culture was noted. Data were not able to be collected in certain areas due to documented natural or cultural obstructions including the pond, fence, and areas of unsafe debris.

Weather conditions encountered include light to medium rain on November 16 and mild temperatures with clear skies on November 17. The terrain was level, with the exception of berms and debris mounds in the southeast. Vegetation included areas of bare sand, low grass, and woodland pines. Observed culture includes Old Bear Creek Road along the south, a chain-linked fence along the southeast, and a small pond (**Table 2**).

Observed Site Conditions: Site UXO-17		
Weather	16-Nov	Light to medium rain, mild Fall temperatures.
	17-Nov	Mostly sunny, mild Fall temperatures.
Terrain		Level, berms, and mounds
Vegetation		Bare sand, low grass, wooded pines.
Culture		Road, fence, and pond.

Table 2. Summary of observed site conditions.

4.4 Data Processing and Interpretation

All data were processed as described in-depth in Section 3.2. Part of the process included analyzing channel decay in order to identify possible noise or other false positive responses. Any anomalies suspected as originating from culture objects (e.g., wells) are noted in the processing reports included on the electronic version (Compact Disk [CD]). Any anomalies suspected as originating from noise (e.g., channel readings out of phase) and non-metallic and/or cultural objects are noted and designated a number based on the type of anomaly. Type one anomalies are cultural objects such as wells or reinforced concrete. Type two anomalies are suspected culture such as underground utilities.

These reports also list down-line data density statistics, leveling, lag, and gridding parameters used in processing each grid block.

5 QUALITY CONTROL

To establish confidence in the data reliability, QC tests were conducted during the project. Tests were conducted prior to, during, and after all data collection sessions. All QC tests for the EM61-MK2 were conducted after a minimum 15 minute warm-up period for the electronics. Sample graphical displays of QC data are included in **Appendix A and B**.

5.1 Geophysical System Verification Plan

The geophysical system verification (GSV) plan, outlined in the GIP, is an alternative to traditional geophysical prove-outs (GPO). The protocol is based on extensive physics models of instrument response to industry standard objects (ISOs) at different orientations and depths. At Site UXO-17 two small ISOs (1in x 4in steel pipes) were seeded in the production area at detectable depths below ground surface (bgs). Small ISOs were also used as static spike test items and IVS seeds for daily QC and verification to be discussed in Section 2.3.1, and 2.3.2. Detailed specifications of the small ISO may be found in the SAP Section 6 GIP (CH2M HILL, 2010b).

Advantages of the GSV program included:

- ISOs were easily obtained, economical, and standard;
- The IVS was small and required little time to install;
- Blind seeding of survey areas ensured continual system verification during production.

5.1.1 Instrument Verification Strip

The IVS is an integral component of the GSV plan. The purpose of surveying the IVS is to demonstrate the effectiveness of all instrumentation, methods, and personnel prior to the initiation of fieldwork and document the site-specific capabilities of a DGM system. Serial number identifications were recorded in the MRSIMS database for all instrumentation (i.e. data logger, EM61-MK2 electronics, coils), and the IVS was mapped using the same personnel, equipment, and methodologies employed for the DGM survey.

A suitable area between transects, free of interference and anomalies, was chosen. Tape measures were used to locally establish a 15m x 4m grid oriented north-south. A 5-line background IVS survey was performed in single coil wheel mode person portable as described in Section 2.4 of this report. The collection pattern is shown in **Figure 4** below. Starting at line 0.25 data was collected in the north direction in an alternating pattern. The resulting data was evaluated for anomalies that may interfere with seed detection.

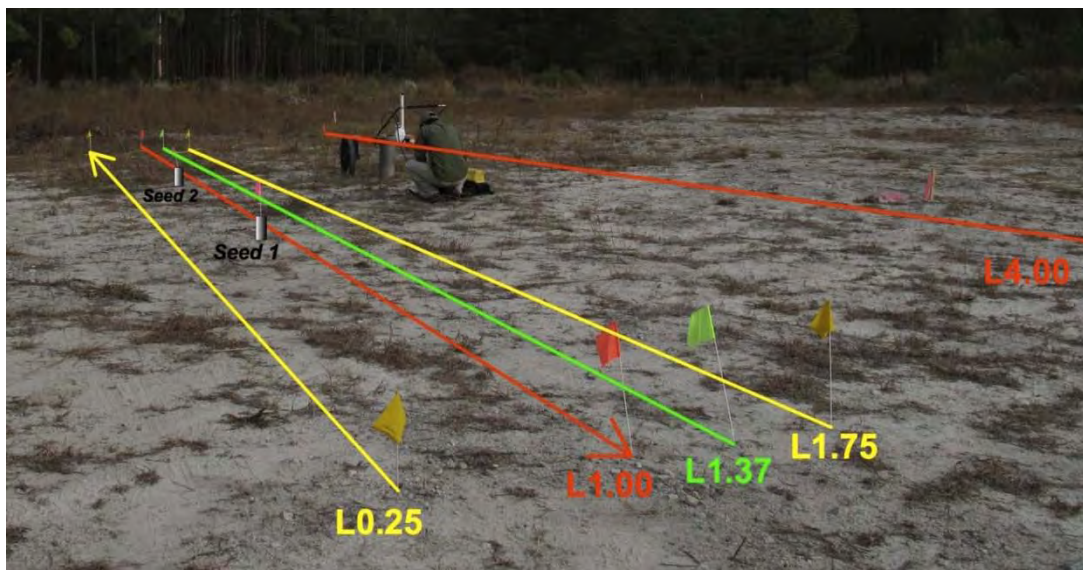


Figure 4. Photo-schematic of IVS test area. Seed item orientation and line positions.

Upon approval of the selected area, two small ISO items (1-inch by 4-inch steel pipes) were buried by the UXO Technician (see **Table 3** for IVS Seed Location). A 5-line seeded IVS survey was performed. In this dataset markers were registered in the data when passing directly over the seed items. The IVS data was used to document the repeatable responses of known objects at known depths. Daily peak responses were plotted against the known small ISO response curve. **Appendix A** contains a comparison of the 5-line Background and Seeded IVSs.

Daily IVS Line						IVS Seed Location		
File Name	Line Number					Seed #	1	2
MMDDIVSBG	0.25	1	1.37	1.75	4	x local (m)	1	1
MMDDIVS1	0.25	1	1.37	1.75	4	y local (m)	5	10
MMDDIVS2	0.25	--	--	--	4	z bgs (cm)	7.6	17.8
Line Type	Full Spacing	Seeded	Half Spacing	Full Spacing	Personnel	Small ISOs Vertically Emplaced		

Table 3. Daily IVS line file naming convention and IVS seed parameters.

*MM is the 2-digit month. DD is the 2-digit day. BG represents background survey.

One represents the beginning of day file and 2 represents end of day file.

**Line spacing is 0.75m relative to the seeded line.

5.1.2 Blind Seeding

The blind seeding portion of the GSV was conducted and evaluated by CH2M HILL. Seed items were emplaced at varying depths throughout the survey area, so that at least one seed item would be surveyed each day. The locations of these items were not provided to NAEVA. CH2M HILL Geophysicist evaluated the data delivered by NAEVA and reported that all blind seeds were detected and targeted.

5.2 QC Test Descriptions and Acceptance Criteria

The following QC procedures were performed and documented during the data collection process and reviewed by a qualified geophysicist on a daily basis:

5.2.1 Static Quality Control Tests

Each day of production the instrument was powered-on for a warm-up period of 15 minutes to stabilize readings and minimize instrument drift. After warm-up, a series of 60 second long “static” QC tests were logged with the instrument immobilized over an area of minimal background response in order to check instrument function in a controlled manner. A set of background/spike tests was also performed at the end of each day. Although designed to check instrument function, these tests, particularly the background test, can also reveal sources of interferences, and local site noise levels. The file naming convention is detailed in **Table 4**. The instrument operator monitored the response during the tests for abnormal behavior. During data processing, the tests were further analyzed quantitatively. Sample daily static QC test profiles can be found in **Appendix B** of this report.

Daily Static QC Tests					
File Name*	Line Number				
MMDDQC1	0	1	2	3	4
MMDDQC2	0	1	2	--	--
Test Type	Background	Spike	Background	Cable Shake	Personnel

Table 4. Daily static QC test file naming convention.

* MM is the 2-digit month. DD is the 2-digit day. One represents beginning of day file, and 2 represents end of day file.

Personnel Test: While logging, the operator monitored changes in data associated with personnel in proximity to the instrument coil. Support personnel not actively operating the instrument generally did not approach the coil during production surveys. This test acted to confirm that the instrument operator, who is closest to the coil during logging, does not interfere with the data. Common sources of problem include metal item in pockets and steel-toed boots.

Cable Shake Test: In the cable shake test, all cables of the system were shaken while logging and monitored for data spikes. This test functioned to detect problems associated with damaged or loose connectors, twisted cables, and other defects. Replacing the offending component usually resolves problems in this test.

Background/Spike Test: Performed twice a day, the background/spike test consisted of three 60 second lines of data: background, ISO/spike, and background. Background lines were monitored for data spikes and noise level while the spike line was monitored for consistent response. Monitoring background noise enabled the Geophysical Data Processor to calibrate data leveling during processing. For the spike test, a small ISO was centrally placed at a distance of 49.5 cm from the EM61-MK2 coil (**Figure 5**). Daily spike response values were plotted against the small ISO response curve at the given depth (**Figure 6**). The acceptance criterion for the spike response was $\pm 20\%$ of the expected response according to the NRL response curve (13.85 mV in Channel 2); static tests were also plotted on a scale of ± 2 mV so that any abnormally high data spikes could be observed.

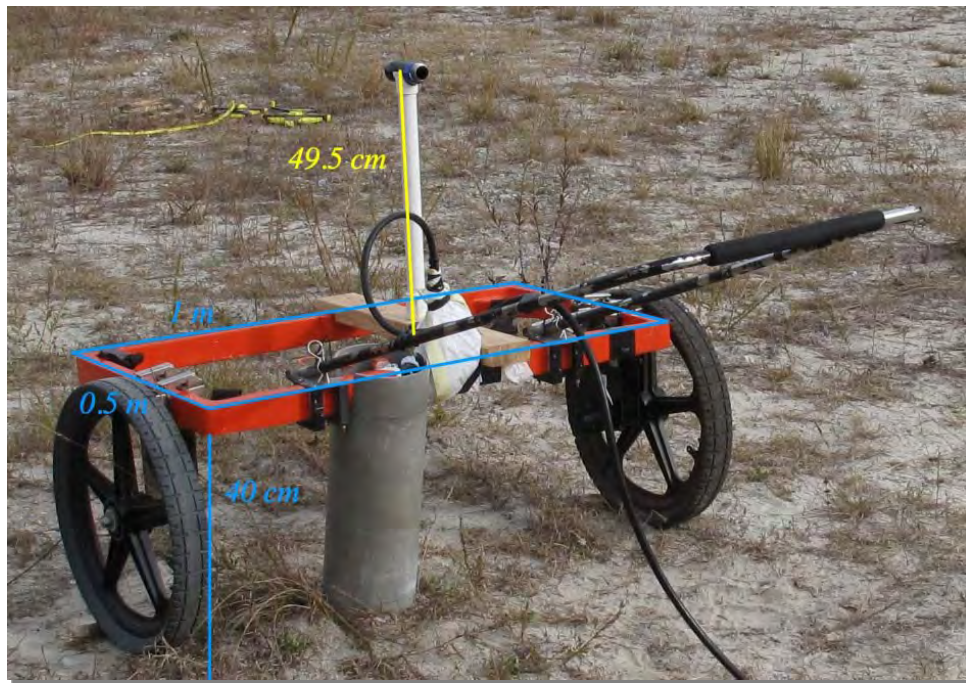


Figure 5. EM61-MK2 wheel mode and Spike Test configuration.

5.2.2 Repeat Data

After completion of each dataset or grid block 2% of the area, or routinely 2 lines of transects were recollected in a separate file to demonstrate instrument consistency and data integrity in the case that the instrument behavior or external noise sources changed through the course of the survey. Repeat data also served to evaluate and validate the particular collection and positioning methods. It was essential in the fiducial method for the operator to maintain a centered and straight line path. If the instrument passes verification while failing repeatability one may attribute failure to incorrect line paths. Evaluation of repeat data was conducted qualitatively against original data profiles.

5.3 QC Test Results

All submitted data met the quality objectives of the project. The instrument passed static ISO/spike tests and IVS seed detection with all peak responses falling within 20% of the expected values (**Figure 6** and **Figure 7**). Static, spike, cable shake, and personnel test profiles were plotted with an acceptance criterion of ± 2 mV from the mean. Any readings outside this range were flagged on the profiles, and an associated failure percentage was reported. IVS seed detection met positional accuracies within 25 cm, and response amplitudes were consistent. All blind seeds were detected and targeted during data processing.

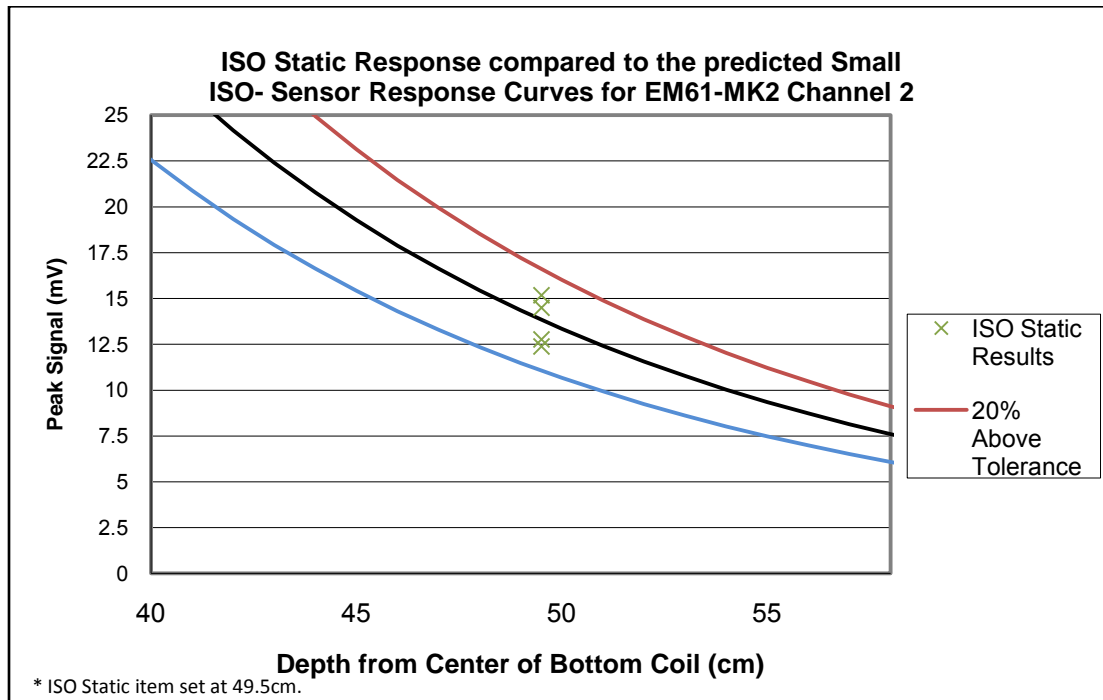


Figure 6. EM61-MK2 Channel 2 Response curve and plot for small ISO static item test

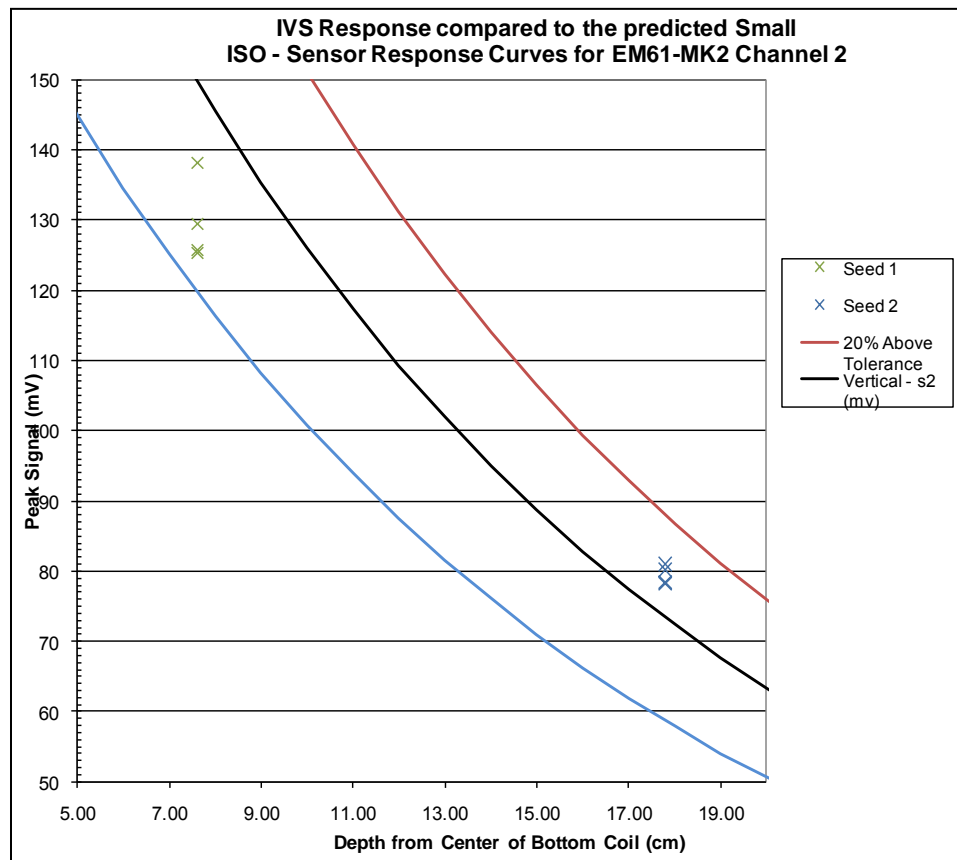


Figure 7. EM61-MK2 Channel 2 Response curve and plot for IVS small ISO seed items

6 CONCLUSIONS

Although lanes of cut brush varied from projected transects to avoid various impediments, brush cutting and stake location and labeling were satisfactory for data collection. Transects were forced to avoid a new fence in the southeast, a pond in the southern central region, a large area of debris in the east, and several smaller areas of debris or holes.

Geophysical mapping collected data over 1.08 acres in 53 transects. 656 anomalies were selected for targeting within these transects. Metal and reinforced concrete debris were observed at multiple locations, and may constitute a portion of the targeted anomalies. Anomalies of various amplitudes are spread generally throughout the site, with broad areas of response and discrete targets present in all areas.

7 REFERENCES

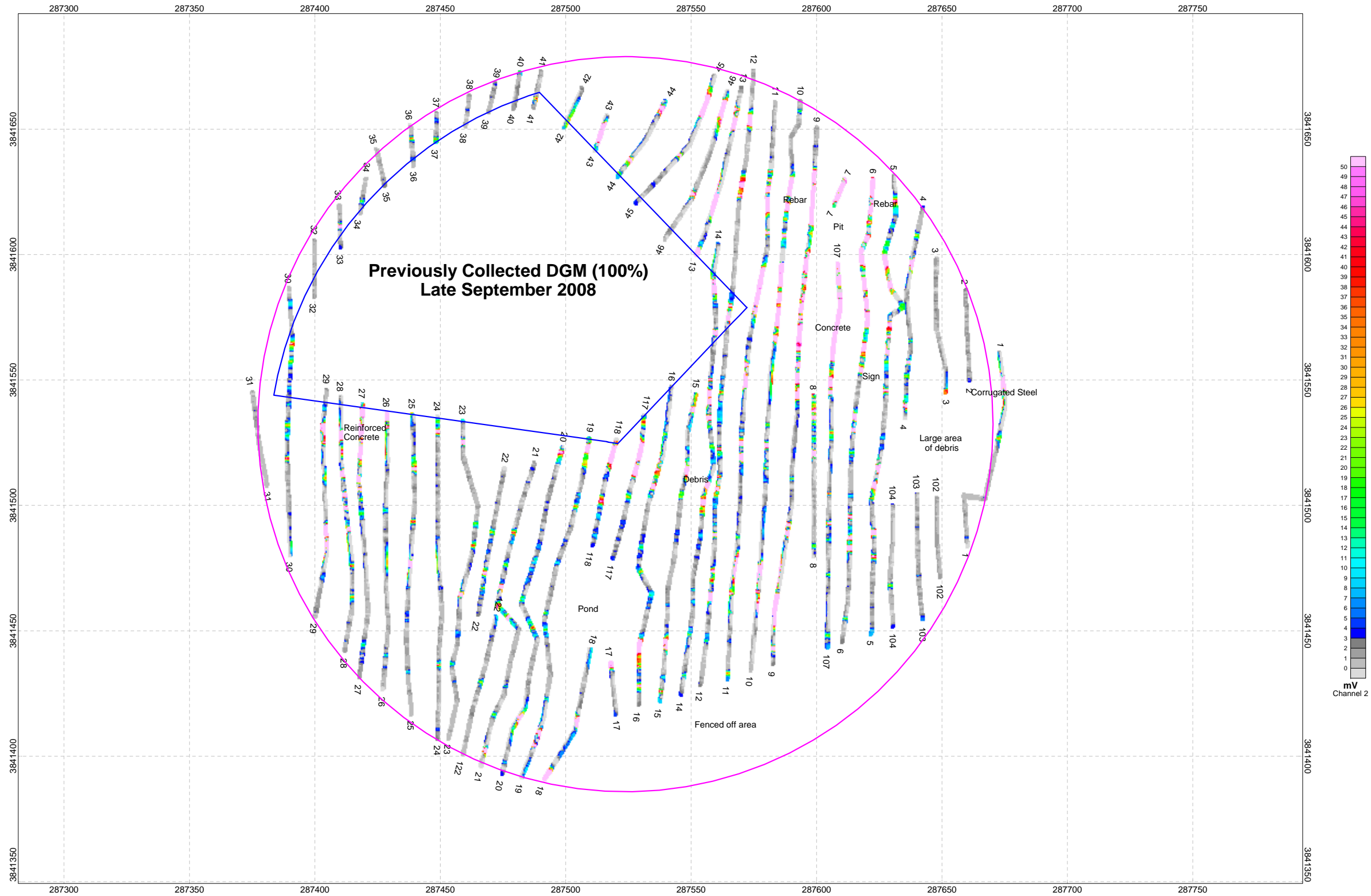
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PLATES



Legend

- Area of Investigation
- Line Path (yellow on maps)

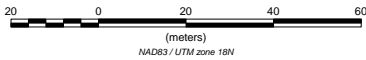


Plate 1

Client: CH2M HILL




EM61 MK2 Bottom Coil Mosaic
Site UXO-17 / CTO-141
Former Firing Position 2
Marine Corps Base, Camp Lejeune
Jacksonville, North Carolina

Date of Survey: 11/16/2010 - 11/17/2010
Date of Map Creation: 11/22/2010

Map Approver: J. Guillard



Legend

-  Area of Investigation
-  Selected Target
(See Individual Block Target Pick List for Response, Location and ID Number.)
-  Line Path (yellow on maps)

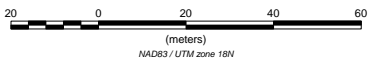


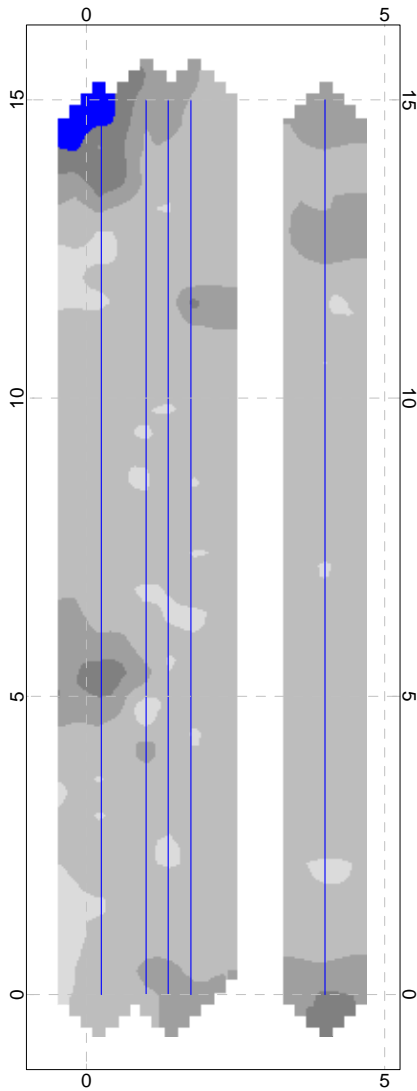
Plate 2

Client: CH2M HILL
Anomaly Distribution (EM61MK2 Channel 2 Selected Targets) Site UXO-17 / CTO-141 Former Firing Position 2 Marine Corps Base, Camp Lejeune Jacksonville, North Carolina
Date of Survey: 11/16/2010 - 11/17/2010 Date of Map Creation: 11/22/2010
Map Approver: J. Guillard

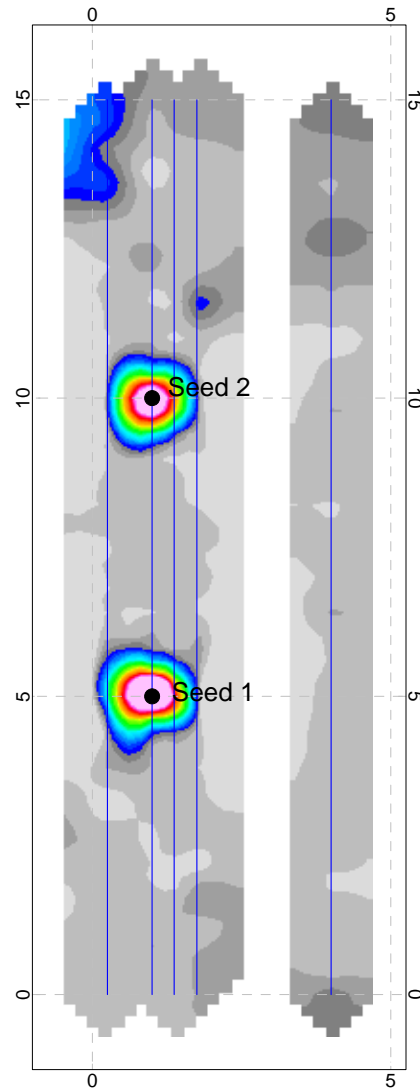
Appendix A:

IVS Results

1116IVSBG (November 16, 2010) Local Background

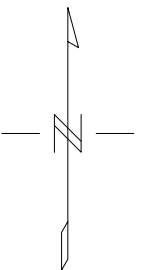
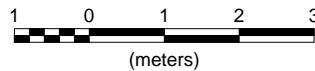


1116IVS (November 16, 2010) Local Seeded



Legend

- Seed Location
- IVS Seed Depths (Vertical)
7.6cm/3in - Seed 1, 17.8cm/7in - Seed 2
- /// Line Path



Client: CH2M HILL

EM61 MK2 Bottom Coil
1116IVS (IVS Test - 5 Lines) Locals Background vs. Seeded
UXO-17/CTO-141
Camp Lejeune, North Carolina

Date of Survey: 11/16/2010
Date of Map Creation: 11/17/2010

Map Approver: J. Guillard

Appendix B:
Example QC Test
Results

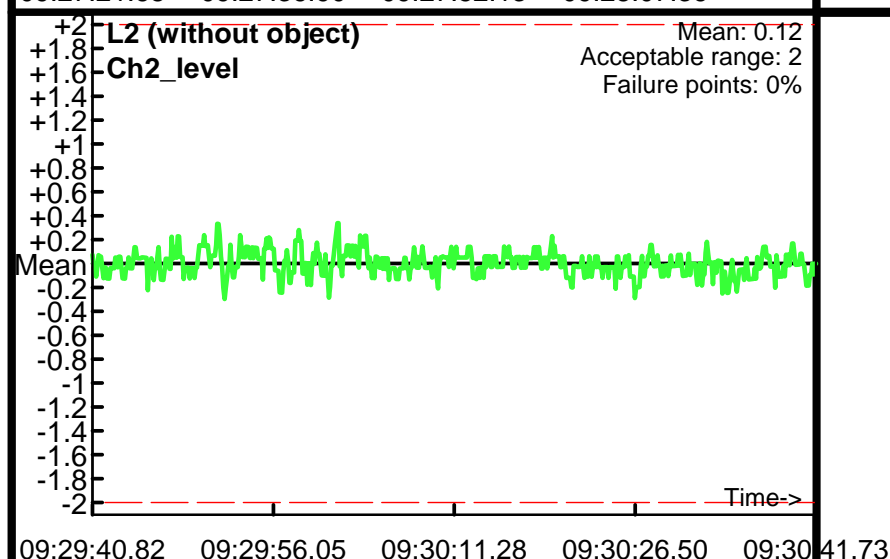
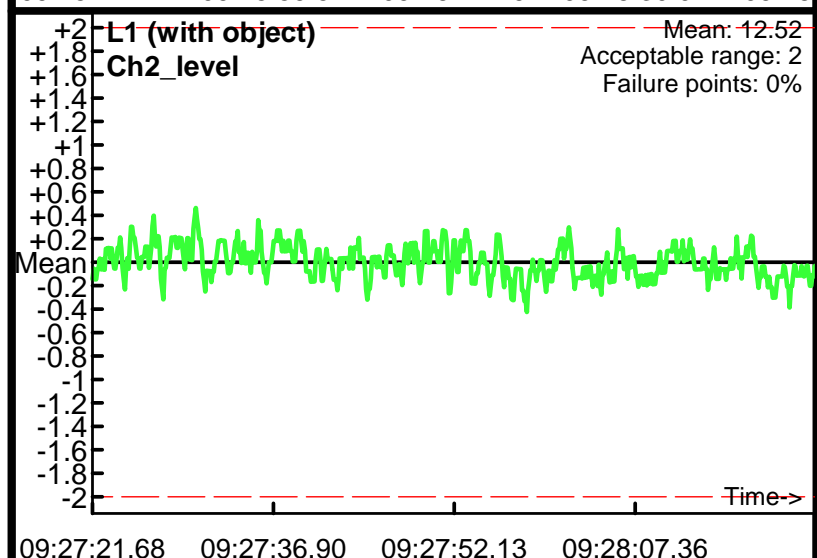
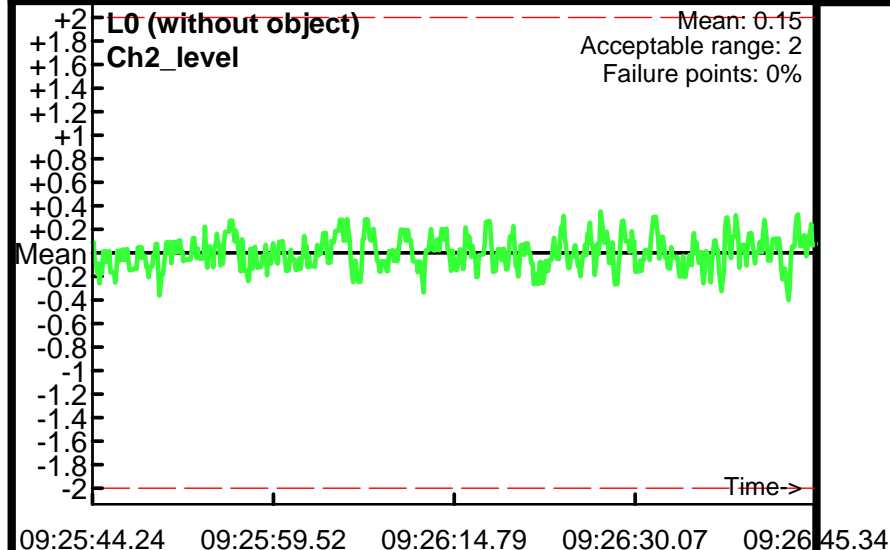
Static Calibration Test

Project: UXO-17/CTO-141 Camp Lejeune
Equipment: EM-61 Mark II
Grid/Location: Localized QC Area

Mean Response Values
Ch2_level Without Object: 0.13
Ch2_level Signal Strength With Object: 12.39

QC1 test
Operator: GeoA
Date: 11/16/2010

● Outside range
— Acceptable limits



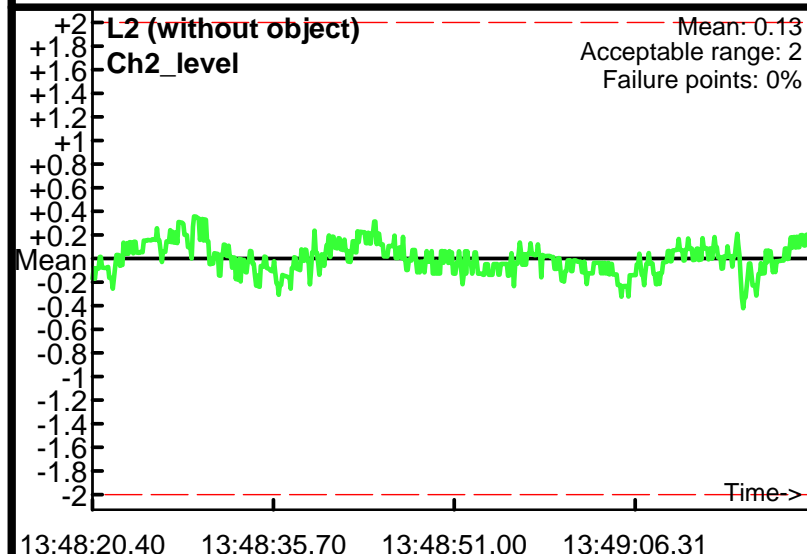
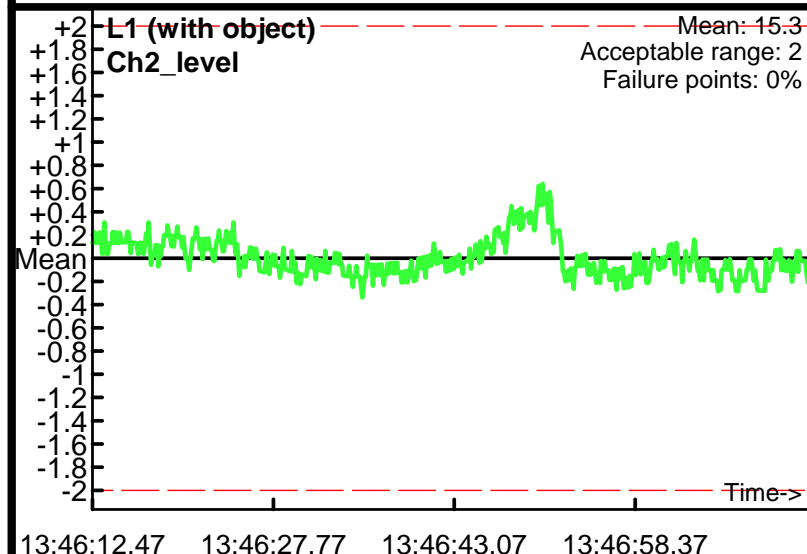
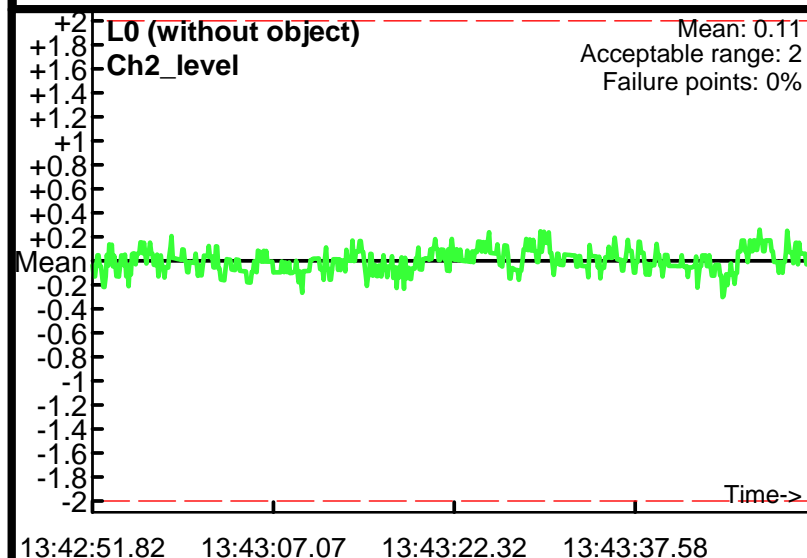
Static Calibration Test

Project: UXO-17/CTO-141 Camp Lejeune
Equipment: EM-61 Mark II
Grid/Location: Localized QC Area

Mean Response Values
Ch2_level Without Object: 0.12
Ch2_level Signal Strength With Object: 15.18

QC2 test
Operator: GeoA
Date: 11/16/2010

● Outside range
— Acceptable limits

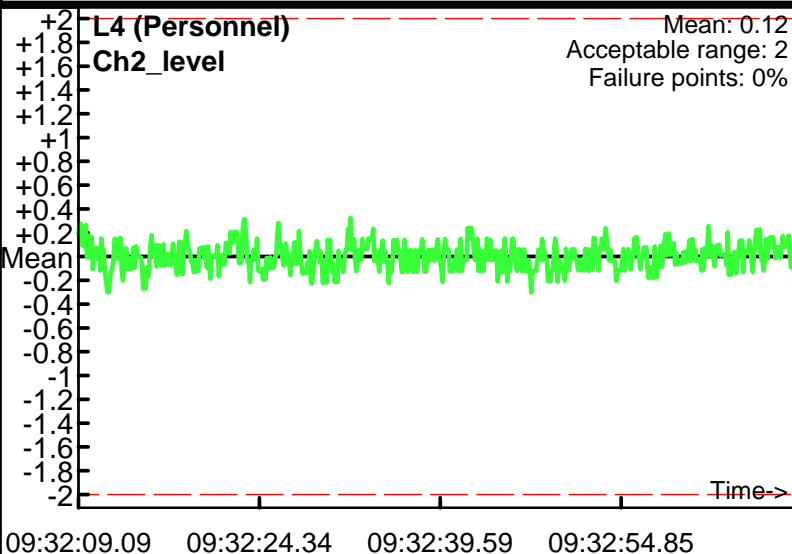
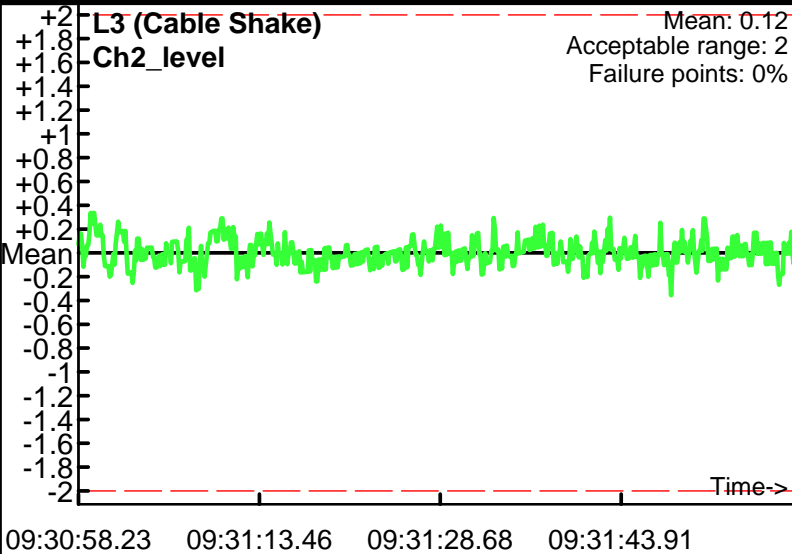


Cable Shake & Personnel Tests

Project: UXO-17/CTO-141 Camp Lejeune
Equipment: EM-61 Mark II
Grid/Location: Localized QC Area

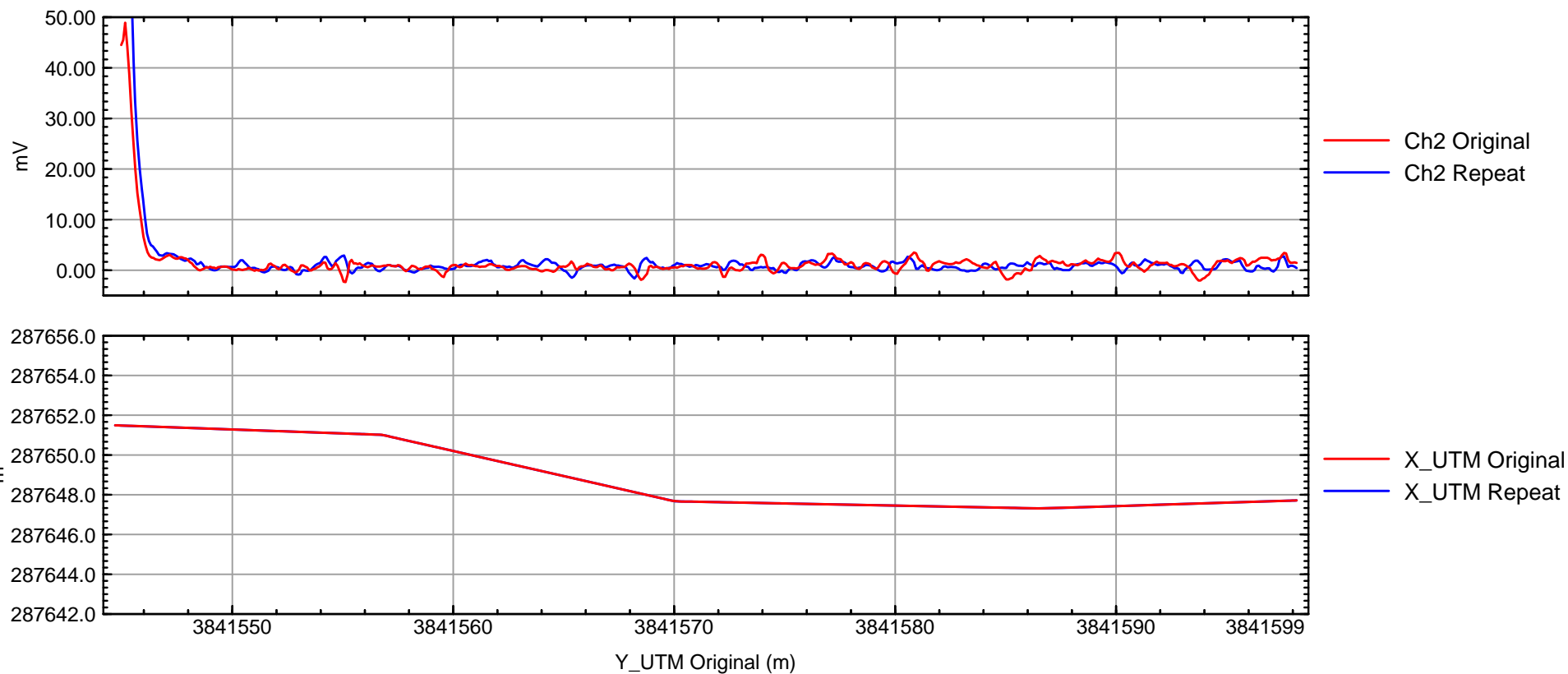
● Outside range
— Acceptable limits

QC1 test
Operator: GeoA
Date: 11/16/2010



Site ID: UXO-17/CTO-141, Camp Lejeune, NC

EM61MK2 - Block T12 - Repeat Line 3



Appendix E
Munitions Debris Disposal Documents

DD FORM 1348-1A, JUL 91 (EG) ISSUE RELEASE/RECEIPT DOCUMENT

1	2	3	4	5	6	7	23	24	25	26	27	28	29	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80																																		
1. TOTAL PRICE														2. SHIP FROM														3. SHIP TO																																																							
UNIT PRICE														DOLLARS														CTS																																																							
DOLLARS														CTS														4. MARK FOR																																																							
5. DOC DATE														6. NMFC														7. FRT RATE														8. TYPE CARGO														9. PS																											
10. QTY. REC'D														11. UP														12. UNIT WEIGHT														13. UNIT CUBE														14. UFC														15. SL													
16. FREIGHT CLASSIFICATION NOMENCLATURE																																																																																			
17. ITEM NOMENCLATURE																																																																																			
Mixed Munitions related materials deemed as "Safe"																																																																																			
18. TY CONT														19. NO CONT														20. TOTAL WEIGHT														21. TOTAL CUBE																																									
Drum														01														400lb est																																																							
22. RECEIVED BY																																								23. DATE RECEIVED																																											

24. DOCUMENT NUMBER & SUFFIX (30-44)

25. NATIONAL STOCK NO & ADD (18-22)

Mixed Metals MDAS
Seal Number. 32585X3
Site UXO-17/Camp Lejeune, NC

26. RIC (4-6)
UI (23-24)
QTY (25-29)
CON CODE (71)
DIST (55-56)
UP (74-80)

This certifies and verifies that the AFDA residue, Range Residue and/or Explosive Contaminated property listed has been 100% properly inspected and to the best of our knowledge and belief, is inert and/or free of explosives or related materials

27. ADDITIONAL DATA

Randel R Zahn
Certifier, Randel Zahn
Senior UXO Supervisor, OFR
Telephone 904-507-1728

William J. Capstick
Verifier William J. Capstick
UXO Quality Control Officer, CH2M Hill
Telephone 678-602-6570

PREVIOUS EDITION MAY BE USED

Adobe Designer 7.0

Destroyed by: [Signature] on 07-06-11
 Witnessed by: [Signature] CH2M HILL on 07-06-11

DD FORM 1348-1A, JUL 91 (EG) ISSUE RELEASE/RECEIPT DOCUMENT

1	2	3	4	5	6	7	23	24	25	26	27	28	29	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
DOC ENT	RI FROM	M & S	UN ITS	QUANTITY	STER	SUPPLE- MENTARY ADDRESS	SIG	FUND	DIS- TRI- BU- TION	PRO- JECT	PR I	RE FO LD	DE AL TE	ADV	RI	OC /P	CM ONT	UNIT PRICE	DOLLARS	CTS	1. TOTAL PRICE	2. SHIP FROM	3. SHIP TO																										
																		DOLLARS	CTS			4. MARK FOR		5. DOC DATE		6. NMFC		7. FRT RATE		8. TYPE CARGO		9. PS																	
																		10. QTY. REC'D	11. UP		12. UNIT WEIGHT		13. UNIT CUBE		14. UFC		15. SL																						
																		16. FREIGHT CLASSIFICATION NOMENCLATURE																															
																		17. ITEM NOMENCLATURE Mixed Munitions related materials deemed as "Safe"																															
																		18. TY CONT		19. NO CONT		20. TOTAL WEIGHT		21. TOTAL CUBE																									
																		Drum		02		125lb est.																											
																		22. RECEIVED BY						23. DATE RECEIVED																									

24. DOCUMENT NUMBER & SUFFIX (30-44)

25. NATIONAL STOCK NO. & ADD (8-22)

Mixed Metals:MDAS
Seal Number: 325852
Site: UXO-17/Camp Lejeune, NC

26. RIC (4-6)
UI (23-24)
QTY (25-29)
CON CODE (71)
DIST (38-56)
UP (74-80)

"This certifies and verifies that the AEDA residue, Range Residue and/or Explosive Contaminated property listed has been 100% properly inspected and to the best of our knowledge and belief, is inert and/or free of explosives or related materials."////////////////////

27. ADDITIONAL DATA

Randel Zahn
Certifier: Randel Zahn
Senior UXO Supervisor, OER
Telephone: 904-507-1728

William J. Capstick
Verifier: William J. Capstick
UXO Quality Control Officer, CH2M Hill
Telephone: 678-602-6570

PREVIOUS EDITION MAY BE USED

Adobe Designer 7.0

Destroyed by: [Signature]Witnessed by: [Signature] CH2M Hill
C. RANKEMA 7-6-11

[illegible]

PREVIOUS EDITION MAY BE USED

Appendix F
Groundwater Sampling Data Sheets



GROUNDWATER SAMPLING DATA SHEET

Client: NAVFAC
 Location: MCB Camp Lejeune
 Event: Multi Media Sampling
 Date: 10/9/08
 Weather: Overcast 70's

Project Number: 363366
 Well ID: ASR2 212 FP2 - TW01
 Sample ID: ASR2 212 FP2 - TW01
 Sampling Team: EMUST
K Rogers

Total Depth: 14.48 FT.(BTOC)
 Depth to water: (-) 6.05 FT.(BTOC)
 Water Column: 8.43 FT.
(x) 0.041 GAL/FT.
 Well Volume: 0.35 GAL.
 Total Purge Vol.: GAL.

Measuring Device: Solinst WLM Pin# A00601
 Date and Time: 10/9/08 1000

Purge Device: Geopump

Well Dia. (inches)	Volume (gallons/foot)
<u>1</u>	<u>0.041</u>
1.25	0.064
2	0.163
4	0.653

SAMPLE DATA

Date: <u>10/9/08</u>	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Other: <u> </u>	Color / Odor / Comments
Time: <u> </u>								
Method: <u>LowFlow</u>								

FIELD PARAMETERS

Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Other: <u>DTW</u>	Color / Odor / Comments
1005	0.1	22.60	0.227	0.58	4.98	18	130	7.2	Slightly Cloudy
1010	0.25	22.51	0.062	0.06	4.97	-12	185	7.05	" "
1015	0.5	22.56	0.050	0.03	4.88	-19	101.2	6.95	" "
1020	0.875	22.55	0.043	0.06	4.77	-26	40.6	6.95	Clear
1025	0.851	22.55	0.042	0.05	4.74	-33	28.5	6.95	Clear
1030	1.25	22.55	0.041	0.02	4.74	-42	21.4	6.95	Clear
1035	1.835	22.53	0.041	0.02	4.76	-51	20.1	6.95	Clear
1040	0.852	22.57	0.040	0.00	4.73	-57	24.6	6.95	Clear
1045	2.5	22.51	0.040	0.00	4.73	-62	17.9	6.95	Clear
1050	3	22.52	0.040	0.00	4.75	-68	20.7	6.94	

Sample information: method, container number, size, and type, preservative used.

Analysis	Preservative	Container requirements	No. of containers
Explosives Residue	NONE	Amber 1L	2
Perchlorate	NONE	250 mL Poly	1
Total metals	HNO3	500 mL Poly	1
Dissolved metals	NONE	500 mL Poly	1

Observations/Notes:

1000 - Change Batteries in Horiba Probe

1020 - Flow rate ~ 200 mL/min

1052 - Flow rate drops as battery begins to go dead.

MS/MSD

Duplicate ID No.: ASR2-212-FP2-TW01

Signature(s):



CH2MHILL

GROUNDWATER SAMPLING DATA SHEET

Client: _____
 Location: _____
 Event: _____
 Date: _____
 Weather: _____

Project Number: 363366
 Well ID: TW01
 Sample ID: ASR2-212.FP2-TW01
 Sampling Team: E. MUST
K. Rogers

Total Depth: _____ FT.(BTOC)
 Depth to water: (-) FT.(BTOC)
 Water Column: _____ FT.
(x) GAL/FT.
 Well Volume: _____ GAL.
 Total Purge Vol.: 500 GAL.
 Purge Device: _____

Measuring Device: _____
 Date and Time: See Sheet 1

Well Dia. (inches)	Volume (gallons/foot)
1	0.041
1.25	0.064
2	0.163
4	0.653

SAMPLE DATA

Date: <u>10/9/08</u>	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Other: _____	Color / Odor / Comments
Time: <u>1120</u>								
Method: <u>Low Flow</u>								

FIELD PARAMETERS

Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Other: <u>DRW</u>	Color / Odor / Comments
1055	3.5	22.77	0.039	0.00	4.69	-68	17.2	6.75	Clear
1100	3.75	22.86	0.038	0.00	4.68	-70	13.3	6.75	Clear
1105	4	22.76	0.038	0.00	4.68	-73	12.4	6.75	Clear
1110	4.25	22.86	0.038	0.00	4.70	-77	11.8	6.76	Clear
1115	4.5	22.95	0.038	0.00	4.68	-78	13.3	6.76	Clear
1120	4.75	22.78	0.038	0.00	4.72	-84	14.2	6.76	Clear
1150	6	23.38	0.038	0.00	4.62	-72	18.2	6.76	Clear
1155	6.25	23.67	0.038	0.00	4.66	-80	17.8	6.76	Clear
1200	6.5	23.97	0.038	0.00	4.65	-79	20.0	6.76	Clear
1210	7	24.74	0.039	0.00	4.64	-76	21.4	6.76	Clear

Sample information: method, container number, size, and type, preservative used.

Analysis	Preservative	Container requirements	No. of containers

Observations/Notes:

1120- ^(m) Turn pump off to see if turb will drop below 10 NTU
 1125- Turn pump back on raise tubing to top of water column
 Turb = 24.8
 1200- Call R. Clow - Stop purging - Sample

MS/MSD

Duplicate ID No.:

Signature(s):



GROUNDWATER SAMPLING DATA SHEET

Client: NAVFAC
 Location: MCB CAMP LEJEUNE
 Event: T0-09 FP2
 Date: 10/9/08
 Weather: OVERCAST 70's

Project Number: T0-09 FP2 363366.06.02

Well ID: ASR2.212.FP2-TW02

Sample ID: ASR2.212.FP2-TW02

Sampling Team: K.R. IRON

EM IRON

Total Depth: 12.78 FT.(BTOC)

Depth to water: (-) 5.51 FT.(BTOC)

Water Column: 7.27 FT.

(x) 0.041 GAL/FT.

Well Volume: 0.298 GAL.

Total Purge Vol.: 1.5 GAL.

Purge Device: Ecology

Measuring Device: SOLIST WLM HOEGA U-22

Date and Time: 10/9/08 0815

Well Dia. (inches)	Volume (gallons/foot)
1	0.041
1.25	0.064
2	0.163
4	0.653

SAMPLE DATA

Date: <u>10/9/08</u>	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Other: <u>FE²⁺</u>	Color / Odor / Comments
Time: <u>0840</u>								
Method:	<u>22.5</u>	<u>0.242</u>	<u>0.00</u>	<u>5.36</u>	<u>-274</u>	<u>4.34</u>	<u>4.5 mg/L</u>	

FIELD PARAMETERS

Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Depth to water Other: <u>FT</u>	Color / Odor / Comments
<u>0815</u>	<u>0.15</u>	<u>21.99</u>	<u>0.245</u>	<u>0.87</u>	<u>5.18</u>	<u>-33</u>	<u>100.9</u>	<u>5.63</u>	<u>Cloudy</u>
<u>0820</u>	<u>0.3</u>	<u>22.27</u>	<u>0.503</u>	<u>0.09</u>	<u>5.39</u>	<u>-95</u>	<u>27.7</u>	<u>5.63</u>	<u>Clear</u>
<u>0825</u>	<u>0.6</u>	<u>22.33</u>	<u>0.413</u>	<u>0.00</u>	<u>5.39</u>	<u>-108</u>	<u>10.97</u>	<u>5.63</u>	<u>"</u>
<u>0830</u>	<u>0.9</u>	<u>22.41</u>	<u>0.271</u>	<u>0.00</u>	<u>5.39</u>	<u>-142</u>	<u>7.12</u>	<u>5.64</u>	<u>"</u>
<u>0835</u>	<u>1.2</u>	<u>22.47</u>	<u>0.258</u>	<u>0.00</u>	<u>5.38</u>	<u>-199</u>	<u>5.74</u>	<u>5.64</u>	<u>"</u>
<u>0840</u>	<u>1.5</u>	<u>22.50</u>	<u>0.242</u>	<u>0.00</u>	<u>5.36</u>	<u>-274</u>	<u>4.34</u>	<u>5.64</u>	<u>"</u>

Sample information: method, container number, size, and type, preservative used.

Analysis	Preservative	Container requirements	No. of containers
<u>EXPLOSIVES</u>	<u>NONE</u>	<u>1 L</u>	<u>2</u>
<u>DISSOLVED REACTANTS</u>	<u>NONE</u>	<u>500 mL</u>	<u>1</u>
<u>TOT. REACTANTS</u>	<u>HNO3</u>	<u>500 mL</u>	<u>1</u>
<u>PERC</u>	<u>NONE</u>	<u>250 mL</u>	<u>1</u>

Observations/Notes: inlet = ~1' from bottom Purge Rate = 0.25 L/min

MS/MSD

YES

Duplicate ID No.:

Signature(s):

[Signature]



GROUNDWATER SAMPLING DATA SHEET

Client: NAVFAC
 Location: MCB CAMP LEJEUNE
 Event: 10-09 SAMPLING FP 2
 Date: 10/9/08
 Weather: cloudy 80

Project Number: 363366
 Well ID: ASR2-212-FP2-TW03
 Sample ID: ASR2-212-FP2-TW03
 Sampling Team: K. Rogers
E. MUST

Total Depth: 15.78 FT.(BTOT)
 Depth to water: (-) 9.48 FT.(BTOT)
 Water Column: 6.3 FT.
(x) 0.041 GAL/FT.
 Well Volume: 0.26 GAL.
 Total Purge Vol.: GAL.

Measuring Device: HORIBA W-22
 Date and Time: 10/9/08 1445

Purge Device: Geopump Peristaltic

Well Dia. (inches)	Volume (gallons/foot)
1	0.041
1.25	0.064
2	0.163
4	0.653

SAMPLE DATA

Date: <u>10/9/08</u>	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Other: <u>2nd</u>	Color / Odor / Comments
Time: <u>1540</u>								
Method: <u>Low Flow</u>	<u>21.19</u>	<u>0.547</u>	<u>0.00</u>	<u>6.33</u>	<u>-155</u>	<u>5.41</u>	<u>5.2</u>	

FIELD PARAMETERS

Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Other: <u>Drw</u> <u>ft</u>	Color / Odor / Comments
<u>1450</u>	<u>1.0</u>	<u>21.94</u>	<u>0.511</u>	<u>0.27</u>	<u>6.26</u>	<u>-147</u>	<u>6.19</u>	<u>9.79</u>	
<u>1455</u>	<u>1.25</u>	<u>21.86</u>	<u>0.515</u>	<u>0.16</u>	<u>6.28</u>	<u>-154</u>	<u>52.2</u>	<u>9.84</u>	
<u>1500</u>	<u>1.50</u>	<u>21.46</u>	<u>0.528</u>	<u>0.00</u>	<u>6.30</u>	<u>-156</u>	<u>20.8</u>	<u>9.87</u>	
<u>1505</u>	<u>1.70</u>	<u>21.38</u>	<u>0.527</u>	<u>0.00</u>	<u>6.30</u>	<u>-156</u>	<u>20.3</u>	<u>9.87</u>	
<u>1510</u>	<u>1.80</u>	<u>21.45</u>	<u>0.536</u>	<u>0.00</u>	<u>6.31</u>	<u>-157</u>	<u>20.0</u>	<u>9.88</u>	
<u>1515</u>	<u>2.0</u>	<u>21.31</u>	<u>0.538</u>	<u>0.00</u>	<u>6.31</u>	<u>-156</u>	<u>11.8</u>	<u>9.90</u>	
<u>1520</u>	<u>2.25</u>	<u>21.29</u>	<u>0.545</u>	<u>0.00</u>	<u>6.32</u>	<u>-156</u>	<u>12.8</u>	<u>9.90</u>	
<u>1525</u>	<u>2.4</u>	<u>21.33</u>	<u>0.554</u>	<u>0.00</u>	<u>6.32</u>	<u>-156</u>	<u>8.37</u>	<u>9.91</u>	
<u>1530</u>	<u>2.6</u>	<u>21.24</u>	<u>0.562</u>	<u>0.00</u>	<u>6.32</u>	<u>-156</u>	<u>6.26</u>	<u>9.91</u>	
<u>1535</u>	<u>3.0</u>	<u>21.19</u>	<u>0.567</u>	<u>0.00</u>	<u>6.33</u>	<u>-155</u>	<u>5.41</u>	<u>9.91</u>	

Sample information: method, container number, size, and type, preservative used.

Analysis	Preservative	Container requirements	No. of containers
<u>Explosives</u>	<u>—</u>	<u>1L</u>	<u>2</u>
<u>TOTAL RCPA metals</u>	<u>HNO3</u>	<u>500 mL</u>	<u>1</u>
<u>PLUS RCPA metals</u>	<u>—</u>	<u>500 mL</u>	<u>1</u>
<u>Perchlorate</u>	<u>—</u>	<u>250 mL</u>	<u>1</u>

Observations/Notes: Inlet Depth ~ 1' From Bottom, Purge Rate = 0.2 L/min

MS/MSD Duplicate ID No.:
 Signature(s):



GROUNDWATER SAMPLING DATA SHEET

Client: NAVFAC
 Location: MCB Camp Lejeune
 Event: Multi Media Sampling
 Date: 10/9/08
 Weather: Cloudy 70%

Project Number: 3T03366
 Well ID: ASR2-212-FP2-TW04
 Sample ID: ASR2-212-FP2-TW04
 Sampling Team: F. Must
K Rogers

Total Depth: 15.82 FT.(BTOC)
 Depth to water: (-) 10.67 FT.(BTOC)
 Water Column: 5.15 FT.
(x) 0.041 GAL/FT.
 Well Volume: 0.21 GAL.
 Total Purge Vol.: 1.5 GAL.

Measuring Device: Solinst A00733 (Pine)
 Date and Time: 10/9/08 1350

Well Dia. (inches)	Volume (gallons/foot)
1	0.041
1.25	0.064
2	0.163
4	0.653

Purge Device: Geopump Pine 9778

SAMPLE DATA

Date: <u>10/9/08</u>	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Other: <u>DTW</u>	Color / Odor / Comments
Time: <u>1420</u>								
Method: <u>Low Flow</u>	<u>20.63</u>	<u>0.076</u>	<u>1.19</u>	<u>4.67</u>	<u>29</u>	<u>0.64</u>	<u>11.51</u>	<u>Clear</u>

FIELD PARAMETERS

Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Other: <u>DTW</u>	Color / Odor / Comments
<u>1355</u>	<u>0.1</u>	<u>20.90</u>	<u>0.262</u>	<u>2.54</u>	<u>4.91</u>	<u>88</u>	<u>67.9</u>	<u>11.45</u>	<u>Clear</u>
<u>1400</u>	<u>0.5</u>	<u>20.77</u>	<u>0.106</u>	<u>1.59</u>	<u>4.75</u>	<u>52</u>	<u>11.5</u>	<u>11.50</u>	<u>Clear</u>
<u>1405</u>	<u>0.75</u>	<u>20.67</u>	<u>0.076</u>	<u>1.25</u>	<u>4.70</u>	<u>38</u>	<u>7.92</u>	<u>11.50</u>	<u>Clear</u>
<u>1410</u>	<u>1</u>	<u>20.67</u>	<u>0.077</u>	<u>1.18</u>	<u>4.69</u>	<u>30</u>	<u>3.63</u>	<u>11.51</u>	<u>Clear</u>
<u>1415</u>	<u>1.25</u>	<u>20.63</u>	<u>0.077</u>	<u>1.18</u>	<u>4.66</u>	<u>31</u>	<u>1.06</u>	<u>11.51</u>	<u>Clear</u>
<u>1420</u>	<u>1.5</u>	<u>20.63</u>	<u>0.076</u>	<u>1.19</u>	<u>4.67</u>	<u>29</u>	<u>0.64</u>	<u>11.51</u>	<u>Clear</u>

Sample information: method, container number, size, and type, preservative used.

Analysis	Preservative	Container requirements	No. of containers
<u>Explosives</u>	<u>—</u>	<u>1 L Amber</u>	<u>2</u>
<u>Perchlorate</u>	<u>—</u>	<u>250 mL Poly</u>	<u>1</u>
<u>ICRA Metals</u>	<u>HNO3</u>	<u>500 mL Poly</u>	<u>1</u>

Observations/Notes:

Flowrate ~ 375 mL/min

MS/MSD

NO

Duplicate ID No.:

Signature(s):

[Signature]

WELL PURGE DATA

Client: NAVFAC Mid-Atlantic Project Number: 377812.F.F.S 406817 SF-UKS
 Location: MCB CAMP LEJEUNE Well ID: MR17-3WATW09
 Event: Camp Devil Dog Construction Area CH2M HILL Personnel: MOST
 Date: 12/5/16 J CROSTIC
 Weather: clear

Total Depth: 16.40 FT.(BTOC)
 Depth to water: (-) 8.39 FT.(BTOC)
 Water Column: 8.01 FT.
(x) .163 GAL/FT.
 Well Volume: 1.3 GAL.
 Total Purge Vol.: 1.3 GAL.

Measuring Device(s): ysi C102074
Model 101271

Well Dia. (inches)	Volume (gallons/foot)
0.75	0.023
1	0.041
2	0.163
4	0.653
6	1.469

Purge Device: per. pump

FIELD PARAMETERS

Time	Depth to Water (ft bgs)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Flow Rate (mL/min)	Color / Odor / Comments
Stabilization Criteria		± 1 °C	± 10%	± 10%	± 0.1	± 10 mV	± 10% or <10		
1210	8.39	14.47	0.034	14.78	4.71	234.4	59.70	270	clear
1215	8.40	14.67	0.034	14.90	4.79	239.2	47.90	270	
1220	8.45	14.65	0.034	14.28	4.78	241.0	30.10	270	
1225	8.45	15.06	0.033	14.28	4.76	245.2	15.75	270	
1230	8.45	15.52	0.032	14.15	4.75	249.5	9.90	270	
1235	8.48	15.29	0.033	14.16	4.74	250.3	9.72	270	
1240	8.48	15.27	0.033	14.17	4.74	253.2	9.70	270	
1245	8.49	15.27	0.033	14.16	4.74	254.1	9.70	270	

Total Volume Purged: 2.5 gallons

Comments:

Sampled at 1245

Signature(s):

[Signature]

UXO-17

WELL PURGE DATA

Client: NAVFAC Mid-Atlantic
 Location: MCB CAMP LEJEUNE
 Event: Camp Devil Dog Construction Area
 Date: 12/6/10
 Weather: 38

Project Number: 377012-ELPS 406817.52.10
 Well ID: MRI7 - TW11
 CH2M HILL Personnel: MLC OST
JAN CRASICK

Total Depth: 16.90 FT.(BTOC)
 Depth to water: (-) 6.64 FT.(BTOC)
 Water Column: 10.26 FT.
(x) .163 GAL/FT.
 Well Volume: 4 GAL.
 Total Purge Vol.: 4 GAL.

Measuring Device(s): Ysi C102-074
Hydra 101241

Well Dia. (inches)	Volume (gallons/foot)
0.75	0.023
1	0.041
2	0.163
4	0.653
6	1.469

Purge Device: Peristaltic

FIELD PARAMETERS

Time	Depth to Water (ft bgs)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Flow Rate (mL/min)	Color / Odor / Comments
Stabilization Criteria		± 1 °C	± 10%	± 10%	± 0.1	± 10 mV	± 10% or <10		
1145	6.71	14.10	0.055	8.65	4.73	239.5	88	378	
1150	6.77	14.53	0.054	8.44	4.68	285.4	67	378	
1155	6.81	14.63	0.054	8.53	4.71	223.8	46	378	
1200	6.83	14.54	0.054	8.56	4.71	226.7	41	378	
1205	6.91	14.58	0.056	8.52	4.69	229.4	37	378	
1210	6.95	14.69	0.054	8.48	4.66	234.1	32	378	
1215	7.00	14.98	0.053	8.38	4.62	239.8	27	378	
1220	7.02	14.68	0.053	8.30	4.61	241.2	29	378	
1225	7.08	14.71	0.053	8.29	4.59	244.0	11	378	

Total Volume Purged: 4 gal

Comments: Sampled @ 1225

Signature(s): [Signature]

Ux0-17

WELL PURGE DATA

Client: NAVFAC Mid-Atlantic
 Location: MCB CAMP LEJEUNE
 Event: Camp Devil Dog Construction Area
 Date: 12/6/10
 Weather: sunny 20°

Project Number: 377812.FL.FS 406817.52.MF
 Well ID: M212- TW10
 CH2M HILL Personnel: J. Crowe
M. Ost

Total Depth: 16.25 FT.(BTOC)
 Depth to water: (-) 8.7 FT.(BTOC)
 Water Column: 7.55 FT.
(x) .163 GAL/FT.
 Well Volume: 1.2 GAL.
 Total Purge Vol.: 3 GAL.

Measuring Device(s): ysi C102074
Hanna 101241

Purge Device: Peristaltic

Well Dia. (inches)	Volume (gallons/foot)
0.75	0.023
1	0.041
2	0.163
4	0.653
6	1.469

FIELD PARAMETERS

Time	Depth to Water (ft bgs)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Flow Rate (mL/min)	Color / Odor / Comments
Stabilization Criteria		± 1 °C	± 10%	± 10%	± 0.1	± 10 mV	± 10% or <10		
1035	8.73	14.03	0.115	9.23	4.72	298.4	223	252	
1040	9.26	12.23	0.116	6.45	4.86	260.2	198	252	
1045	8.45	12.58	0.119	6.53	4.83	253.3	162	252	
1050	8.71	12.55	0.119	6.39	4.83	251.3	132	262	
1055	8.94	12.63	0.119	6.25	4.82	239.2	89	252	
1100	8.91	12.76	0.119	6.09	4.81	228.2	62	252	
1105	8.71	12.52	0.121	5.84	4.81	212.3	73	252	
1110	8.99	12.36	0.118	5.89	4.80	209.7	29	252	
1115	9.01	12.99	0.118	5.84	4.79	219	12	252	
1120	9.04	12.13	0.118	5.81	4.78	218.7	11	252	

Total Volume Purged: 3 gallons

Comments: start purging 1035
sampled @ 1120

Signature(s): [Signature]

Vx017

Purge

WELL PURGE DATA

Client: NAVFAC Mid-Atlantic
 Location: MCB CAMP LEJEUNE
 Event: ~~Ship Repair Dock Construction Area~~
 Date: 12/6/10
 Weather: _____

Project Number: 372812.FLE6
 Well ID: MR17-JW13
 CH2M HILL Personnel: TAK CROSTIC

Total Depth: 20.27 FT.(BTOC)
 Depth to water: (-) 10.25 FT.(BTOC)
 Water Column: 9.52 FT.
 (x) 0.63 GAL/FT.
 Well Volume: 1.55 GAL.
 Total Purge Vol.: 3.5 GAL.

Measuring Device(s): YSI 6102-074
Hach 101241

Purge Device: PERISTALTIC
WATER PUMP

Well Dia. (inches)	Volume (gallons/foot)
0.75	0.023
1	0.041
2	0.163
4	0.653
6	1.469

FIELD PARAMETERS

Time	Depth to Water (ft bgs)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Flow Rate (mL/min)	Color / Odor / Comments
Stabilization Criteria		± 1 °C	± 10%	± 10%	± 0.1	± 10 mV	± 10% or <10		
0840	10.82	12.84	0.214	7.93	4.18	233.2	80.	331	0/000
0845	10.90	14.77	0.218	7.36	4.18	242.3	61	331	
0850	10.91	15.05	0.214	7.20	4.19	253.1	57	331	
0855	10.92	15.12	0.206	7.19	4.20	255.2	49	331	
0900	10.95	15.27	0.195	7.06	4.21	270.1	42	331	
0905	10.99	15.27	0.174	6.92	4.24	270.0	38	331	
0910	10.99	15.65	0.158	6.72	4.25	270.3	32	331	
0915	11.02	15.66	0.158	6.71	4.26	271.5	22	331	
0920	11.03	15.67	0.155	6.88	4.25	274.2	19	331	

Total Volume Purged: 3.5 gallons

Comments: Sampled @ 0820

Signature(s): [Signature]

UX017 Purge

WELL PURGE DATA

Client: NAVFAC Mid-Atlantic
 Location: MCB CAMP LEJEUNE
 Event: ~~Camp Devil Dog Construction Area~~
 Date: 12/6/10
 Weather: _____

Project Number: 377812.FLPS 406817.5F.135
 Well ID: MR13-TW19
 CH2M HILL Personnel: J. Crostic
M. Bist

Total Depth: 19 FT.(BTOC)
 Depth to water: (-) 13.5 FT.(BTOC)
 Water Column: 6.5 FT.
(x) 0.63 GAL/FT.
 Well Volume: 1.0 GAL.
 Total Purge Vol.: 2.5 GAL.

Measuring Device(s): VSI 0102074
Hach 101291

Purge Device: PERISTALTIC PUMP

Well Dia. (inches)	Volume (gallons/foot)
0.75	0.023
1	0.041
2	0.163
4	0.653
6	1.469

FIELD PARAMETERS

Time	Depth to Water (ft bgs)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Flow Rate (mL/min)	Color / Odor / Comments
Stabilization Criteria		± 1 °C	± 10%	± 10%	± 0.1	± 10 mV	± 10% or <10		
0735	13.30	19.68	0.094	7.83	4.77	168.5	60	270	clear
0740	13.35	16.71	0.091	7.05	4.66	179.1	48	270	
0745	13.37	17.00	0.090	6.43	4.62	172.1	42	270	
0750	13.41	17.15	0.090	6.47	4.63	179.0	39	270	
0755	13.47	16.90	0.089	6.31	4.63	205.3	32	270	
0800	13.48	16.88	0.089	6.21	4.63	211.2	29	270	
0805	13.52	16.80	0.089	6.11	4.63	216.0	25		
0810	13.53	16.83	0.089	6.09	4.63	219.2	19		

Total Volume Purged: 2.5 gal

Comments: Sampled @ 0810

Signature(s): 

Ux0-17

MW.15

WELL PURGE DATA

Client: NAVFAC Mid-Atlantic
 Location: MCB CAMP LEJEUNE
 Event: Camp Devil Dog Construction Area
 Date: 12/5/10
 Weather: Sunny, 80°F

Project Number: 406817. SE. MS 37702.F.F.8
 Well ID: MRI - TWIS
 CH2M HILL Personnel: MLDJS
J. C. GRIFFIN

Total Depth: 15.6 FT.(BTOC)
 Depth to water: (-) 2.15 FT.(BTOC)
 Water Column: 8.45 FT.
(x) .163 GAL/FT.
 Well Volume: 1.37 GAL.
 Total Purge Vol.: 3.0 GAL.

Measuring Device(s): ysi C 102074
Hi-Ark 101271

Purge Device: per. pump

Well Dia. (inches)	Volume (gallons/foot)
0.75	0.023
1	0.041
2	0.163
4	0.653
6	1.469

FIELD PARAMETERS

Time	Depth to Water (ft bgs)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Flow Rate (mL/min)	Color / Odor / Comments
Stabilization Criteria		± 1 °C	± 10%	± 10%	± 0.1	± 10 mV	± 10% or <10		
1320	2.15	13.53	0.080	13.43	5.04	261.3	87.60	2.83	
1325	2.18	14.66	0.141	4.45	5.22	200.2	80.50	2.83	
1330	2.20	16.06	0.175	9.74	5.30	137.7	12.10	2.83	
1335	2.20	16.08	0.180	8.43	5.35	134.2	10.19	2.83	
1340	2.22	16.40	0.181	3.81	5.36	117.3	8.98	2.83	
1345	2.23	16.13	0.195	3.86	5.36	108.6	7.24	2.83	
1350	2.25	15.77	0.192	7.17	5.33	102.3	3.68	2.83	
1355	2.28	15.78	0.171	6.81	5.31	98.2	8.10	2.83	
1400	2.28	15.77	0.171	6.92	5.31	97.1	8.01	2.83	

Total Volume Purged: 3.0 Gallons

Comments: Sampled at 1400, duplicate at 1405

Signature(s): MLDJS

GROUNDWATER SAMPLING DATA SHEET

Client: NAVFAC
Location: MCB CamLej
Event: WE-41 Groundwater Sampling
Date: 7/28/2011
Weather: 80°

Project Number: _____
Well ID: MR 17-TW09
Sample ID: MR 17-GW09-11C
Sampling Team: G. Cook, D. Sandoz, B. Hardy, C. Walek

Total Depth: 16.2 FT.(BTOT)
Depth to water: (-) 12.97 FT.(BTOT)
Water Column: 3.23 FT.
Well Volume: (x) .123 GAL/FT.
Total Purge Vol.: .052 GAL. $\times 3 = 1.57$
Purge Device: Bladder Pump
Pump Inlet Depth: 14 FT.(BTOT)

Measuring Device: YSI 556# 17153
HANNA# 09036

Well Dia. (inches)	Volume (gallons/foot)
1	0.041
1.25	0.064
2	0.163
4	0.653
6	1.469

SAMPLE DATA							
Date: <u>7-28-11</u>	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Color / Odor / Comments
Time: <u>1740</u>							
Method: <u>Low flow</u>	<u>20.20</u>	<u>0.134</u>	<u>4.5</u>	<u>7.66</u>	<u>-178.4</u>	<u>21.1</u>	

FIELD PARAMETERS									
Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Depth to water (ft bgs)	Color / Odor / Comments
Stabilization Criteria		± 10%	± 3%	± 10%	± 0.1	± 10 mV	± 10% or <10		
<u>1615</u>	<u>-</u>	<u>22.10</u>	<u>0.151</u>	<u>32.7</u>	<u>6.14</u>	<u>-104.4</u>	<u>1000</u>	<u>13.41</u>	<u>cloudy / swif</u>
<u>1620</u>	<u>-</u>	<u>21.08</u>	<u>0.142</u>	<u>15.5</u>	<u>6.64</u>	<u>148.7</u>	<u>562</u>	<u>13.44</u>	<u>" "</u>
<u>1625</u>	<u>-</u>	<u>20.86</u>	<u>0.139</u>	<u>9.2</u>	<u>6.93</u>	<u>162.7</u>	<u>206</u>	<u>13.52</u>	<u>" "</u>
<u>1630</u>	<u>-</u>	<u>20.74</u>	<u>0.137</u>	<u>7.6</u>	<u>8.68</u>	<u>-197.6</u>	<u>110</u>	<u>13.49</u>	<u>" "</u>
<u>1635</u>	<u>-</u>	<u>20.60</u>	<u>0.137</u>	<u>7.1</u>	<u>8.80</u>	<u>-186.0</u>	<u>81.7</u>	<u>13.52</u>	<u>" "</u>
<u>1640</u>	<u>-</u>	<u>20.61</u>	<u>0.137</u>	<u>6.3</u>	<u>9.41</u>	<u>-196.1</u>	<u>85.0</u>	<u>13.54</u>	<u>" "</u>
<u>1645</u>	<u>-</u>	<u>20.57</u>	<u>0.136</u>	<u>6.1</u>	<u>9.48</u>	<u>-187.1</u>	<u>73.2</u>	<u>13.51</u>	<u>" "</u>
<u>1650</u>	<u>-</u>	<u>20.49</u>	<u>0.136</u>	<u>5.4</u>	<u>9.42</u>	<u>-200.2</u>	<u>68.1</u>	<u>13.51</u>	<u>" "</u>
<u>1655</u>	<u>-</u>	<u>20.47</u>	<u>0.136</u>	<u>5.0</u>	<u>9.96</u>	<u>-197.2</u>	<u>45.4</u>	<u>13.54</u>	<u>" "</u>
<u>1700</u>	<u>-</u>	<u>20.47</u>	<u>0.135</u>	<u>4.8</u>	<u>8.76</u>	<u>-196.8</u>	<u>39.4</u>	<u>13.53</u>	<u>" "</u>

Analysis	Preservative	Container requirements	No. of containers
<u>SVOCs</u>	<u>-</u>	<u>1L Amber</u>	<u>1</u>
<u>VOCs</u>	<u>HCl</u>	<u>40 mL glass</u>	<u>3</u>

Observations/Notes: _____ Purge Start Time: 1615 Purge Rate: 325 mL/min

MS/MSD _____ Duplicate ID No.: _____

Signature(s): R. J. Hall



GROUNDWATER SAMPLING DATA SHEET

Client: NAVFAC
 Location: MCB CamLej
 Event: WE-41 Groundwater Sampling
 Date: 7/28/2011
 Weather: 80°

Project Number: _____
 Well ID: MR 17-TWO9
 Sample ID: MR 17-GW04-11C
 Sampling Team: G. Couch, D. Seed, B. Harvey, C. Welelt

Total Depth: 16.2 FT.(BTOTC)
 Depth to water: (-) 12.97 FT.(BTOTC)
 Water Column: 3.23 FT.
 (x) 1.63 GAL/FT.
 Well Volume: 0.52 GAL. $1.3 = 1.57$
 Total Purge Vol.: 8.1 GAL.

Measuring Device: YSI 556# 17153
 HANNA# 09036

Purge Device: Bladder Pump

Pump Inlet Depth: 14 FT.(BTOTC)

Well Dia. (inches)	Volume (gallons/foot)
1	0.041
1.25	0.064
2	0.163
4	0.653
6	1.469

SAMPLE DATA

Date: 07-28-11	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Color / Odor / Comments
Time: 17.40							
Method: 17-TWO9	20.20	0.134	4.5	7.66	-178.4	21.1	Clear / Sulfur

FIELD PARAMETERS

Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Depth to water (ft bgs)	Color / Odor / Comments
Stabilization Criteria		± 10%	± 3%	± 10%	± 0.1	± 10 mV	± 10% or <10		
1705	-	20.44	0.135	4.2	8.84	-196.9	39.3	13.94	
1710	-	20.45	0.135	4.3	8.87	-190.5	36.2	13.51	
1715	-	20.36	0.135	4.3	8.68	-190.0	44.1	13.51	
1720	-	20.38	0.132	-	-	-	-	-	Clear Flow cell
1725	-	20.50	0.134	4.6	7.65	-153.9	28.6	13.53	
1730	-	20.24	0.134	5.6	7.51	-185.9	24.3	13.52	
1735	-	20.24	0.134	5.4	7.45	-176.2	21.1	13.52	
1740	8.2	20.20	0.134	4.5	7.66	-178.4	21.1	13.53	

Analysis	Preservative	Container requirements	No. of containers
SEE PAGE 1			

Observations/Notes: _____ Purge Start Time: 1715 Purge Rate: 325 mL/min

MS/MSD

Duplicate ID No.: _____

Signature(s): By J. H. L.



GROUNDWATER SAMPLING DATA SHEET

Client: NAVFAC
 Location: MCB CamLej
 Event: WE-41 Groundwater Sampling
 Date: 7/28/2011
 Weather: 75°

Project Number:
 Well ID: MR17-TW11
 Sample ID: MR17-GW11-11C
 Sampling Team: D. Seed/ROV

Total Depth: 16.86 FT.(BTOC)
 Depth to water: (+) 10.91 FT.(BTOC)
 Water Column: 5.95 FT.
 (X) 0.163 GAL/FT.
 Well Volume: 0.96 GAL. $\times 3 = 2.9$
 Total Purge Vol.: 3.2 GAL.

Measuring Device: YSI 556# 13076
 HANNA# 09026

Purge Device: Bladder Pump

Pump Inlet Depth: 15 FT.(BTOC)

Well Dia. (inches)	Volume (gallons/foot)
1	0.041
1.25	0.064
2	0.163
4	0.653
6	1.469

SAMPLE DATA

Date: 7/28/11	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Color / Odor / Comments
Time: 1720							
Method: Low Flow	22.45	0.113	1.41	3.36	183.2	48.9	

FIELD PARAMETERS

Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Depth to water (ft bgs)	Color / Odor / Comments
Stabilization Criteria		± 10%	± 3%	± 10%	± 0.1	± 10 mV	± 10% or <10		
1650	0.8	22.97	0.116	2.30	4.13	206.7	159	12.7	
1700	1.6	22.66	0.118	1.79	4.62	196.1	102	13.1	
1710	2.4	22.58	0.116	1.61	3.53	158.9	69.2	13.25	
1720	3.2	22.45	0.113	1.41	3.36	183.2	48.9	13.25	

Analysis	Preservative	Container requirements	No. of containers
VOCs	1K1	40 ml vial	3
SUOCs	-	2C amber	1

Observations/Notes: Purge Start Time: 1640 (Dug) Purge Rate: 0.34/min

MS/MSD

Duplicate ID No.:

Signature(s):

GROUNDWATER SAMPLING DATA SHEET

Client: NAVFAC
 Location: MCB CamLej
 Event: WE-41 Groundwater Sampling
 Date: 7/29/2011
 Weather: 60°

Project Number: _____
 Well ID: MR17-TW13
 Sample ID: MR17-6W13-11C
 Sampling Team: D. Seel/ROV

Total Depth: 19.5 FT.(BTOC)
 Depth to water: (-) 14.7 FT.(BTOC)
 Water Column: 4.8 FT.
 (x) 0.163 GAL/FT.
 Well Volume: 0.78 GAL. 13 = 2.34
 Total Purge Vol.: 3.4 GAL.

Measuring Device: YSI 556# 17153
 HANNA# 08986

Well Dia. (inches)	Volume (gallons/foot)
1	0.041
1.25	0.064
2	0.163
4	0.653
6	1.469

Purge Device: Bladder Pump

Pump Inlet Depth 17 FT.(BTOC)

SAMPLE DATA

Date:	Temp.	Cond.	DO	pH	ORP	Turbidity	Color / Odor / Comments
<u>7/29/11</u>	°C	mS/cm	mg/L	SU	mV	NTU	
Time: <u>0745</u>							
Method: <u>Low Flow</u>	<u>20.14</u>	<u>0.044</u>	<u>3.50</u>	<u>3.61</u>	<u>210.8</u>	<u>15.9</u>	

FIELD PARAMETERS

Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Depth to water (ft bgs)	Color / Odor / Comments
Stabilization Criteria		± 10%	± 3%	± 10%	± 0.1	± 10 mV	± 10% or <10		
<u>0755</u>	<u>1.3</u>	<u>20.25</u>	<u>0.048</u>	<u>5.30</u>	<u>2.96</u>	<u>236.3</u>	<u>19.9</u>	<u>15.14</u>	
<u>0805</u>	<u>2.6</u>	<u>20.24</u>	<u>0.049</u>	<u>3.77</u>	<u>3.60</u>	<u>210.1</u>	<u>40</u>	<u>16.15</u>	
<u>0915</u>	<u>3.9</u>	<u>20.14</u>	<u>0.044</u>	<u>3.50</u>	<u>3.61</u>	<u>210.8</u>	<u>15.9</u>	<u>16.37</u>	

Analysis	Preservative	Container requirements	No. of containers
<u>VOCs</u>	<u>HCl</u>	<u>40 mL vials</u>	<u>3</u>
<u>SVOCs</u>	<u>=</u>	<u>12 Amber</u>	<u>1</u>

Observations/Notes: _____ Purge Start Time: 0745 Purge Rate: 0.52/min

MS/MSD _____ Duplicate ID No.: _____
 Signature(s): [Signature]

GROUNDWATER SAMPLING DATA SHEET

Client: NAVFAC
 Location: MCB CamLej
 Event: WE-41 Groundwater Sampling
 Date: 7/29/2011
 Weather: 80°

Project Number: _____
 Well ID: MR17-TW14
 Sample ID: MR17-GW14-11C
 Sampling Team: D. Seed/ROV

Total Depth: 18.77 FT.(BTOC)
 Depth to water: (-) 15.73 FT.(BTOC)
 Water Column: 3.04 FT.
 (x) 0.163 GAL/FT.
 Well Volume: 0.495 GAL ≈ 1.486
 Total Purge Vol.: 1.6 GAL.

Measuring Device: YSI 556# 13076
HANNA# 69026

Purge Device: Bladder Pump

Pump Inlet Depth 17.8 FT.(BTOC)

Well Dia. (inches)	Volume (gallons/foot)
1	0.041
1.25	0.064
2	0.163
4	0.653
6	1.469

SAMPLE DATA

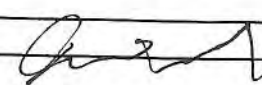
Date:	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Color / Odor / Comments
7/29/11							
Time: 0935							
Method: Low flow	23.29	0.127	7.82	4.12	221.0	25.2	

FIELD PARAMETERS

Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Depth to water (ft bgs)	Color / Odor / Comments
Stabilization Criteria		± 10%	± 3%	± 10%	± 0.1	± 10 mV	± 10% or <10		
0915	0.4	21.61	0.134	15.84	4.09	221.2	182	18.48	
0925	0.8	22.28	0.130	8.11	4.12	222.0	90.6	17.56	
0935	1.6	23.29	0.127	7.82	4.12	221.0	25.2	17.57	

Analysis	Preservative	Container requirements	No. of containers
VOCs	HCl	40 mL glass	3
SVOCs	-	1 L amber	1

Observations/Notes: _____ Purge Start Time: 0905 Purge Rate: 0.34/min

MS/MSD _____ Duplicate ID No.: _____
 Signature(s): 



GROUNDWATER SAMPLING DATA SHEET

Client: NAVFAC
 Location: MCB CamLej
 Event: WE-41 Groundwater Sampling
 Date: 7/29/2011
 Weather: 88°

Project Number: _____
 Well ID: MR TW-15 MR17-TW15
 Sample ID: MR 17-GW15-11C
 Sampling Team: Ben Hardy General Conch D Speed C Welch

Total Depth: 16.39 FT.(BTOC)
 Depth to water: (-) 10.10 FT.(BTOC)
 Water Column: 6.39 FT.
 (x) .183 GAL/FT. $\times 3 = 3.12$
 Well Volume: 1.041 GAL.
 Total Purge Vol.: 3.75 GAL.

Measuring Device: YSI 556# 11427
 HANNA# 09010

Purge Device: Bladder Pump

Pump Inlet Depth 14.0 FT.(BTOC)

Well Dia. (inches)	Volume (gallons/foot)
1	0.041
1.25	0.064
2	0.163
4	0.653
6	1.469

SAMPLE DATA

Date: <u>07.29.11</u>	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Color / Odor / Comments
Time: <u>0940</u>							
Method: <u>low flow</u>	<u>21.22</u>	<u>0.183</u>	<u>2.06</u>	<u>4.92</u>	<u>58.4</u>	<u>75.3</u>	

FIELD PARAMETERS

Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Depth to water (ft bgs)	Color / Odor / Comments
Stabilization Criteria		± 10%	± 3%	± 10%	± 0.1	± 10 mV	± 10% or <10		
<u>0850</u>	<u>-</u>	<u>20.98</u>	<u>0.162</u>	<u>1.86</u>	<u>4.58</u>	<u>128.5</u>	<u>310</u>	<u>11.19</u>	<u>cloud / No Odor</u>
<u>0855</u>	<u>-</u>	<u>21.10</u>	<u>0.161</u>	<u>1.53</u>	<u>4.52</u>	<u>124.6</u>	<u>138</u>	<u>11.31</u>	<u>" "</u>
<u>0900</u>	<u>-</u>	<u>21.09</u>	<u>0.163</u>	<u>1.21</u>	<u>4.63</u>	<u>112.1</u>	<u>95.0</u>	<u>11.55</u>	<u>" "</u>
<u>0905</u>	<u>-</u>	<u>21.12</u>	<u>0.165</u>	<u>0.91</u>	<u>4.77</u>	<u>93.5</u>	<u>180</u>	<u>11.39</u>	<u>" "</u>
<u>0910</u>	<u>-</u>	<u>21.09</u>	<u>0.167</u>	<u>1.13</u>	<u>4.82</u>	<u>83.1</u>	<u>400</u>	<u>11.35</u>	<u>" "</u>
<u>0915</u>	<u>-</u>	<u>21.06</u>	<u>0.174</u>	<u>1.63</u>	<u>4.84</u>	<u>77.6</u>	<u>325</u>	<u>11.36</u>	<u>" "</u>
<u>0920</u>	<u>-</u>	<u>21.08</u>	<u>0.179</u>	<u>1.96</u>	<u>4.86</u>	<u>69.8</u>	<u>127</u>	<u>11.37</u>	<u>" "</u>
<u>0925</u>	<u>-</u>	<u>21.17</u>	<u>0.181</u>	<u>2.27</u>	<u>4.90</u>	<u>64.7</u>	<u>94</u>	<u>11.34</u>	<u>" "</u>
<u>0930</u>	<u>-</u>	<u>21.19</u>	<u>0.192</u>	<u>2.13</u>	<u>4.91</u>	<u>60.4</u>	<u>79.4</u>	<u>11.35</u>	<u>" "</u>
<u>0935</u>	<u>-</u>	<u>21.23</u>	<u>0.184</u>	<u>2.09</u>	<u>4.91</u>	<u>59.2</u>	<u>74.1</u>	<u>11.35</u>	<u>" "</u>
<u>0940</u>	<u>3.75</u>	<u>21.22</u>	<u>0.183</u>	<u>2.06</u>	<u>4.92</u>	<u>58.4</u>	<u>75.3</u>	<u>11.35</u>	

Analysis	Preservative	Container requirements	No. of containers

Observations/Notes: _____ Purge Start Time: 0850 Purge Rate: 300 mL/min

MS/MSD

Duplicate ID No.:

Signature(s): Ben Hardy

GROUNDWATER SAMPLING DATA SHEET

Client: NAVFAC
 Location: MCB CamLej
 Event: WE-41 Groundwater Sampling
 Date: 7/29/2011
 Weather: 90's Sunny

Project Number:

Well ID: MR 17-TW16

Sample ID: MR 17-GW16-11

Sampling Team: G. C. C. Seed, C. W. W. W., R. Hardy

Total Depth: 16 FT.(BTOC)
 Depth to water: (-) 12.65 FT.(BTOC)
 Water Column: 3.35 FT.
 (x) 1.63 GAL/FT.
 Well Volume: 0.546 GAL. $1.63 \times 3 = 1.638$
 Total Purge Vol.: 3 GAL.

Measuring Device: YSI 556# 17153

HANNA# 09036

Purge Device: Bladder Pump

Pump Inlet Depth 14 FT.(BTOC)

Well Dia. (inches)	Volume (gallons/foot)
1	0.041
1.25	0.064
2	0.163
4	0.653
6	1.469

SAMPLE DATA

Date:	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Color / Odor / Comments
07-28-11							
Time: 0820							
Method: Low Flow	20.91	0.439	2.2	6.04	33.2	22.3	clear / No odor

FIELD PARAMETERS

Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Depth to water (ft bgs)	Color / Odor / Comments
Stabilization Criteria		± 10%	± 3%	± 10%	± 0.1	± 10 mV	± 10% or <10		
0735	-	22.61	0.545	31.3	5.85	202.1	28.2	12.79	clear / No odor
0740	-	21.49	0.518	11.8	5.91	183.5	84.1	12.86	" "
0745	-	21.07	0.486	6.2	5.93	133.1	69.7	12.91	" "
0750	-	20.95	0.464	4.5	5.91	109.2	50.2	12.92	" "
0755	-	20.89	0.456	3.8	5.91	90.9	39.2	12.91	" "
0800	-	20.89	0.449	3.2	5.97	68.0	33.4	12.91	" "
0805	-	20.84	0.444	2.7	6.04	50.3	30.7	12.91	" "
0810	-	20.88	0.442	2.4	6.08	34.5	24.0	12.91	" "
0815	-	20.93	0.440	2.2	6.05	30.6	23.0	12.91	" "
0820	3	20.91	0.439	2.2	6.04	33.2	22.3	12.91	clear / No odor

Analysis

Preservative

Container requirements

No. of containers

VOCs

12CL

40 mL

3

SVOCs

11 Amber

1

Observations/Notes:

Purge Start Time: 0735

Purge Rate: 325 mL/min

MS/MSD

Signature(s): Randy Hardy

Duplicate ID No.:



GROUNDWATER SAMPLING DATA SHEET

Client: NAVFAC
 Location: MCB CamLej
 Event: WE-41 Groundwater Sampling
 Date: 7/26/2011
 Weather: Rainy 80°

Project Number: _____
 Well ID: MR17-TW17
 Sample ID: MR 17-GW17-11C
 Sampling Team: D. Seed/ROU

Total Depth: 16 FT.(BTOC)
 Depth to water: (-) 11.12 FT.(BTOC)
 Water Column: 4.88 FT.
 (x) 0.163 GAL/FT³ = 2386
 Well Volume: 0.7 GAL.
 Total Purge Vol.: 2.75 GAL.

Measuring Device: YSI 556# 17153
 HANNA# D9026

Purge Device: Bladder Pump

Pump Inlet Depth: 14 FT.(BTOC)

Well Dia. (inches)	Volume (gallons/foot)
1	0.041
1.25	0.064
2	0.163
4	0.653
6	1.469

SAMPLE DATA

Date: 7/26/11	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Color / Odor / Comments
Time: 0950							
Method: Low Flow	22.20	0.578	0.20	6.64	26.1	14.7	

FIELD PARAMETERS

Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Depth to water (ft bgs)	Color / Odor / Comments
Stabilization Criteria		± 10%	± 3%	± 10%	± 0.1	± 10 mV	± 10% or <10		
0935	1.2	22.27	0.606	0.23	6.84	50.7	62.4	11.38	
0940	1.65	22.23	0.596	0.22	6.89	40.7	30.9		
0945	2.2	22.21	0.583	0.21	6.67	29.7	23.1		
0950	2.75	22.20	0.578	0.20	6.64	26.1	14.7		

Analysis	Preservative	Container requirements	No. of containers
VOCs	HCl	40ml Vials	3
SUDCs	-	2L Amber	1

Observations/Notes: _____ Purge Start Time: 0925 Purge Rate: 0.44/min

MS/MSD

Duplicate ID No.: MR17-GW17-11C @ 1000

Signature(s):

GROUNDWATER SAMPLING DATA SHEET

Client: NAVFAC
 Location: MCB CamLej
 Event: WE-41 Groundwater Sampling
 Date: 7/26/2011
 Weather: Overcast / Light Rain

Project Number: _____
 Well ID: MR-17-TW18
 Sample ID: MR-17-GW-18-11C
 Sampling Team: G. Cook / A. Seed

Total Depth: 17 FT.(BTOC)
 Depth to water: (-) 12.16 FT.(BTOC)
 Water Column: 4.84 FT.
(x) 1632 GAL/FT.
 Well Volume: 0.72 ~~0.68~~ GAL. - ~~2.04~~ 3.0
 Total Purge Vol.: 3.85 GAL.

Measuring Device: YSI 556# 13076
 HANNA# 09036

Well Dia. (inches)	Volume (gallons/foot)
1	0.041
1.25	0.064
2	0.163
4	0.653
6	1.469

Purge Device: Bladder Pump

Pump Inlet Depth 15 FT.(BTOC)

SAMPLE DATA

Date: <u>7-26-11</u>	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Color / Odor / Comments
Time: <u>1010</u>							
Method: <u>Low Flow</u>	<u>21.50</u>	<u>0.543</u>	<u>9.9</u>	<u>5.97</u>	<u>147</u>	<u>9.03</u>	<u>clear / no odor</u>

FIELD PARAMETERS

Time	Purge Vol. (gals)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Depth to water (ft bgs)	Color / Odor / Comments
Stabilization Criteria		± 10%	± 3%	± 10%	± 0.1	± 10 mV	± 10% or <10		
<u>0930</u>	<u>.55</u>	<u>22.18</u>	<u>0.581</u>	<u>16.2</u>	<u>5.74</u>	<u>214.7</u>	<u>41.5</u>	<u>12.32</u>	<u>clear / no odor</u>
<u>0935</u>	<u>1.10</u>	<u>21.85</u>	<u>0.583</u>	<u>17.3</u>	<u>5.90</u>	<u>180.3</u>	<u>59.7</u>	<u>12.37</u>	<u>clear / no odor</u>
<u>0945</u>	<u>1.65</u>	<u>21.73</u>	<u>0.576</u>	<u>14.1</u>	<u>5.92</u>	<u>173.7</u>	<u>52.5</u>	<u>12.38</u>	<u>" "</u>
<u>0950</u>	<u>2.20</u>	<u>21.60</u>	<u>0.554</u>	<u>11.2</u>	<u>5.94</u>	<u>163.4</u>	<u>29.8</u>	<u>12.40</u>	<u>" "</u>
<u>0955</u>	<u>2.75</u>	<u>21.59</u>	<u>0.551</u>	<u>10.8</u>	<u>5.95</u>	<u>158.9</u>	<u>22.0</u>	<u>12.39</u>	<u>" "</u>
<u>1000</u>	<u>3.30</u>	<u>21.54</u>	<u>0.546</u>	<u>10.2</u>	<u>5.96</u>	<u>157.7</u>	<u>12.9</u>	<u>12.39</u>	<u>" "</u>
<u>1005</u>	<u>3.85</u>	<u>21.50</u>	<u>0.543</u>	<u>9.9</u>	<u>5.97</u>	<u>147.0</u>	<u>9.03</u>	<u>12.39</u>	<u>" "</u>

Analysis	Preservative	Container requirements	No. of containers
<u>VOCs</u>	<u>HCl</u>	<u>40ml vials</u>	<u>3</u>
<u>SVDcs</u>	<u>-</u>	<u>1L bottles</u>	<u>2</u>

Observations/Notes: _____ Purge Start Time: 0930 Purge Rate: .42 / min

MS/MSD _____ Duplicate ID No.: _____
 Signature(s): [Signature]

Appendix G
MEC Intrusive Investigation Results

Anomaly ID	Grid	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6D1-001	F5D6D1	1187.147991	2/16/2011	287385.375	3841545.25	Cultural Debris	Scrap	N/A	N/A	N/A	2	0	15	Scrap Bin	None	Eng stakes
F5D6D1-002	F5D6D1	245.7838278	2/16/2011	287385.875	3841548.125	Cultural Debris	Scrap	N/A	N/A	N/A	8	0	60	Scrap Bin	None	5- eng stakes, 2-metal brackets, fiberglass matting BHA
F5D6D2-001	F5D6D2	1415.793945	12/8/2010	287387.4	3841556 RRD		Misc	Other (see comments)	N/A	N/A	1	0	6	Scrap Bin	None	6 ft engineer stake surface
F5D6D2-002	F5D6D2	1149.719116	12/8/2010	287388.2	3841555.2 SHD		No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with D2-1
F5D6D2-003	F5D6D2	151.8446959	12/8/2010	287391.6	3841562.8 RRD		Misc	Other (see comments)	N/A	N/A	12	12	6	Scrap Bin	None	5- metal rtb collars 2-fiber rtb collars 1-ammo can lid 3-
F5D6D2-004	F5D6D2	67.30302429	12/8/2010	287393.6	3841560.4 RRD		Misc	Other (see comments)	N/A	N/A	6	2	6	Scrap Bin	None	lifting lugs bundle comm wire
F5D6D2-005	F5D6D2	41.50474596	12/8/2010	287392.95	3841559.75 RRD		Misc	Other (see comments)	N/A	N/A	4	2	4	Scrap Bin	None	5-lifting lugs nails pallet pieces
F5D6D2-006	F5D6D2	28.24792479	12/8/2010	287393.5607	3841556.988 RRD		Misc	Other (see comments)	N/A	N/A	3	4	0.5	Scrap Bin	None	4- lifting lugs
F5D6D2-007	F5D6D2	26.15818782	12/8/2010	287387.76	3841553.75 RRD		Misc	Other (see comments)	N/A	N/A	2	2	1.5	Scrap Bin	None	2 safety forks and wire
F5D6D2-008	F5D6D2	22.16004752	12/8/2010	287389.9858	3841563.919 RRD		Misc	Other (see comments)	N/A	N/A	32	20	16	Scrap Bin	None	1 lift lug and 10ft of comm wire
F5D6D2-009	F5D6D2	21.43983888	12/8/2010	287392	3841561.25 RRD		Misc	Other (see comments)	N/A	N/A	5	16	3	Scrap Bin	None	15-fiber rtb collar 16 lift lugs assorted MRE foil trash
F5D6D2-010	F5D6D2	20.48665236	12/8/2010	287390.4	3841556.8 RRD		Misc	Other (see comments)	N/A	N/A	5	2	0.2	Scrap Bin	None	2-metal rtb collars 1-safety fork 1- lift lug comm wire and
F5D6D2-011	F5D6D2	12.89293956	12/8/2010	287397.2	3841559.8 RRD		Misc	Other (see comments)	N/A	N/A	1	1	1	Scrap Bin	None	pallet debris
F5D6D2-012	F5D6D2	12.6197285	12/8/2010	287394.1444	3841555.747 MPPEH		Misc	Other (see comments)	N/A	N/A	2	1	0.1	Scrap Bin	None	1- safety fork 4-pieces wire
F5D6D2-013	F5D6D2	11.32798576	12/8/2010	287399.8351	3841565.195 RRD		Misc	Other (see comments)	N/A	N/A	1	3	0.5	Scrap Bin	None	1-lift lug
F5D6D2-014	F5D6D2	10.65814972	12/8/2010	287391.7003	3841555.784 RRD		Misc	Other (see comments)	N/A	N/A	1	3	0.5	Scrap Bin	None	2-5.56 blank expended
F5D6D2-015	F5D6D2	10.59036732	12/8/2010	287393.4	3841554.4 RRD		Misc	Other (see comments)	N/A	N/A	2	6	2	Scrap Bin	None	1- lift lug
F5D6D2-016	F5D6D2	9.519222259	12/8/2010	287392.8	3841556 RRD		Misc	Other (see comments)	N/A	N/A	1	2	0.1	Scrap Bin	None	1-lift lug comm wire
F5D6D2-017	F5D6D2	8.867621405	12/8/2010	287389.9	3841565 MPPEH		Misc	Other (see comments)	N/A	N/A	3	2	0.1	Scrap Bin	None	2- lugs comm wire
F5D6D2-018	F5D6D2	8.484719276	12/8/2010	287398.6678	3841564.794 RRD		Misc	Other (see comments)	N/A	N/A	1	3	1	Scrap Bin	None	12ft comm wire
F5D6D2-019	F5D6D2	4.893129825	12/8/2010	287398	3841563.6 RRD		Misc	Other (see comments)	N/A	N/A	5	8	2	Scrap Bin	None	3 5.56 blank
F5D6D2-020	F5D6D2	3.708826893	12/8/2010	287393.95	3841558.25 RRD		Misc	Other (see comments)	N/A	N/A	1	2	0.1	Scrap Bin	None	1-lug, 2 primer cans,comm wire, cammo net
F5D6D2-021	F5D6D2	3.419327498	12/8/2010	287397.94	3841565.75 DMM		Misc	Other (see comments)	(See Comr	N/A	4	4	0.1	Consolidation Point	Demil	1- tent stake
F5D6D2-022	F5D6D2	3.011660814	12/8/2010	287400	3841575.4 RRD		Misc	Other (see comments)	N/A	N/A	17	8	0.5	Scrap Bin	None	4-5.56mm blank unfired
F5D6E1-001	F5D6E1	753.113699	12/14/2010	287420.5667	3841543.403 RRD		Scrap	N/A	N/A	N/A	3	2	10	Scrap Bin	None	Comm wire and 16 soda cans
F5D6E1-002	F5D6E1	432.7666407	12/15/2010	287433.8289	3841540.416 RRD		Scrap	N/A	N/A	N/A	1	2	10	Scrap Bin	None	2- 6ft eng stakes and razor wire
F5D6E1-003	F5D6E1	183.5953426	12/15/2010	287438.5	3841548.75 Cultural Debris		Scrap	N/A	N/A	N/A	2	20	2	Scrap Bin	None	6ft eng stake
F5D6E1-004	F5D6E1	149.8679394	12/14/2010	287446.75	3841543.375 Cultural Debris		Scrap	N/A	N/A	N/A	2	8	0.5	Scrap Bin	None	2 alum sheet metal backhoe assist
F5D6E1-005	F5D6E1	119.1420913	12/14/2010	287442.8795	3841544.749 Cultural Debris		Scrap	N/A	N/A	N/A	1	8	1	Scrap Bin	None	Re-bar and wire
F5D6E1-006	F5D6E1	102.6747779	2/8/2011	287447.5	3841539 Cultural Debris		Scrap	N/A	N/A	N/A	1	40	12	Left in Place	None	6x8 sheet metal
F5D6E1-007	F5D6E1	96.88125936	12/15/2010	287442.8092	3841546.61 Cultural Debris		Scrap	N/A	N/A	N/A	1	8	1	Scrap Bin	None	6x18" alum sheet metal
F5D6E1-008	F5D6E1	82.04584902	12/14/2010	287447.2456	3841542.373 Cultural Debris		Scrap	N/A	N/A	N/A	1	12	5	Scrap Bin	None	3 ft fence post
F5D6E1-009	F5D6E1	77.49377638	12/15/2010	287417.3811	3841539.554 Cultural Debris		Scrap	N/A	N/A	N/A	1	0	1000	Consolidation Point	None	4'x4' concrete colvert BHA
F5D6E1-010	F5D6E1	57.72826517	12/8/2010	287408.875	3841547.25 RRD		Misc	Other (see comments)	N/A	N/A	1	6	8	Scrap Bin	None	8ft length re-bar
F5D6E1-011	F5D6E1	57.26594169	12/15/2010	287429.625	3841543.625 Cultural Debris		Scrap	N/A	N/A	N/A	2	12	1	Scrap Bin	None	Re-bar and wire
F5D6E1-012	F5D6E1	56.78657196	12/15/2010	287436.5313	3841549.851 Cultural Debris		Scrap	N/A	N/A	N/A	2	22	2	Scrap Bin	None	2- alum sheet metal BHA
F5D6E1-013	F5D6E1	48.29116107	12/14/2010	287423.25	3841540.625 RRD		Scrap	N/A	N/A	N/A	3	6	1	Scrap Bin	None	2-pieces razor wire and lrg spike
F5D6E1-014	F5D6E1	40.6765266	12/15/2010	287438.1525	3841538.302 Cultural Debris		Scrap	N/A	N/A	N/A	2	4	1	Scrap Bin	None	Lag bolt and nail
F5D6E1-015	F5D6E1	39.94045384	12/15/2010	287441.8494	3841547.16 Cultural Debris		Scrap	N/A	N/A	N/A	2	8	2	Scrap Bin	None	2- alum sheet metal
F5D6E1-016	F5D6E1	38.41207081	12/15/2010	287428.6692	3841541.057 RRD		Scrap	N/A	N/A	N/A	1	3	0.5	Scrap Bin	None	Razor wire
F5D6E1-017	F5D6E1	35.60148755	12/8/2010	287408.4802	3841546.168 SHD		No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E1-10
F5D6E1-018	F5D6E1	33.52833194	12/15/2010	287441.7123	3841549.882 RRD		Scrap	N/A	N/A	N/A	1	18	4	Scrap Bin	None	3ft eng stake
F5D6E1-019	F5D6E1	32.69157361	12/14/2010	287422.125	3841539 MPPEH	Small Arms Br.	Small Arms Brass		N/A	N/A	3	0	0.1	Scrap Bin	None	Expended 7.62mm blanks
F5D6E1-020	F5D6E1	30.02936772	12/8/2010	287405.971	3841547.624 RRD		Misc	Other (see comments)	N/A	N/A	2	3	1	Scrap Bin	None	1-lug , 1-safty fork
F5D6E1-021	F5D6E1	24.84963922	12/15/2010	287426.3474	3841548.703 Cultural Debris		Scrap	N/A	N/A	N/A	2	12	0.5	Scrap Bin	None	Alum sheet metal and wire
F5D6E1-022	F5D6E1	24.70784846	12/8/2010	287407.7081	3841544.606 SHD		No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E1-10
F5D6E1-023	F5D6E1	23.97393642	12/15/2010	287425.9533	3841547.887 SHD		Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared E1-21
F5D6E1-024	F5D6E1	21.03981609	2/15/2011	287431.1751	3841541.13 Cultural Debris		Scrap	N/A	N/A	N/A	1	36	7	Left in Place	None	
F5D6E1-025	F5D6E1	18.36320931	12/14/2010	287449.39	3841549.92 Cultural Debris		Scrap	N/A	N/A	N/A	1	5	3	Scrap Bin	None	3ft length re-bar
F5D6E1-026	F5D6E1	13.49451708	2/16/2011	287436.1187	3841548.501 Cultural Debris		Scrap	N/A	N/A	N/A	1	36	8	Left in Place	None	
F5D6E1-027	F5D6E1	13.34962347	2/15/2011	287429.75	3841549.625 RRD		Scrap	N/A	N/A	N/A	1	30	3	Left in Place	None	Ammo can lid
F5D6E1-028	F5D6E1	11.46862471	12/15/2010	287440.5	3841539.125 Cultural Debris		Scrap	N/A	N/A	N/A	2	3	0.5	Scrap Bin	None	Aerosol can and pipe
F5D6E1-029	F5D6E1	11.30985133	12/14/2010	287447.875	3841549.375 Cultural Debris		Scrap	N/A	N/A	N/A	1	3	5	Scrap Bin	None	Concrete and re-enforce wire
F5D6E1-030	F5D6E1	10.62414551	12/14/2010	287422.6247	3841544.213 Cultural Debris		Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	Barb wire
F5D6E1-031	F5D6E1	10.45378384	12/15/2010	287427.75	3841548.625 Cultural Debris		Scrap	N/A	N/A	N/A	2	4	0.2	Scrap Bin	None	Heavy wire and scrap metal
F5D6E1-032	F5D6E1	10.43038106	2/8/2011	287448.25	3841544.125 Cultural Debris		Scrap	N/A	N/A	N/A	1	36	10	Scrap Bin	None	
F5D6E1-033	F5D6E1	9.64974159	12/14/2010	287449.625	3841540.5 Cultural Debris		Scrap	N/A	N/A	N/A	1	12	0.5	Scrap Bin	None	4ft barb wire
F5D6E1-034	F5D6E1	9.079348095	12/15/2010	287423.9371	3841546.418 RRD		Scrap	N/A	N/A	N/A	1	0	0.5	Scrap Bin	None	Razor wire surface
F5D6E1-035	F5D6E1	8.979487916	12/15/2010	287436.0872	3841538.232 RRD		Scrap	N/A	N/A	N/A	2	24	3	Scrap Bin	None	Eng stake and wire BHA
F5D6E1-036	F5D6E1	8.188326836	12/14/2010	287426.25	3841542.875 RRD		Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Razor wire
F5D6E1-037	F5D6E1	8.18776077	2/9/2011	287445.5	3841545.75 Cultural Debris		Scrap	N/A	N/A	N/A	1	30	3600	Left in Place	None	Lrg concrete slab and lrg re-bar
F5D6E1-038	F5D6E1	7.481099271	12/15/2010	287440.6195	3841548.117 Cultural Debris		Scrap	N/A	N/A	N/A	1	6	0.2	Scrap Bin	None	6ft heavy wire
F5D6E1-039	F5D6E1	7.470361829	12/14/2010	287447	3841536.625 Cultural Debris		Scrap	N/A	N/A	N/A	1	2	0.2	Scrap Bin	None	6" carrige bolt
F5D6E1-040	F5D6E1	7.445301846	12/15/2010	287443.75	3841540.625 RRD		Scrap	N/A	N/A	N/A	1	22	1	Scrap Bin	None	1ft eng stake BHA
F5D6E1-041	F5D6E1	7.433879353	12/15/2010	287437.125	3841537.625 SHD		Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared with E1-35
F5D6E1-042	F5D6E1	7.394334311	2/9/2011	287444.8343	3841546.587 SHD		Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared with E1-37
F5D6E1-043	F5D6E1	7.304640754	12/15/2010	287439.625	3841539.75 Cultural Debris		Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Barb wire
F5D6E1-044	F5D6E1	6.873598009	12/14/2010	287425.125	3841541.5 RRD		Scrap	N/A	N/A	N/A	1	2	0.2	Scrap Bin	None	Razor wire
F5D6E1-045	F5D6E1	6.603288024	12/14/2010	287419.5592	3841539.475 Cultural Debris		Scrap	N/A	N/A	N/A	2	1	0.1	Scrap Bin	None	2- pieces of wire

Anomaly ID	Grid	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6E1-046	F5D6E1	6.539776744	2/8/2011	287440.2618	3841536.117	Cultural Debris	Misc	N/A	N/A	N/A	1	30	0		None	Metal Colvert
F5D6E1-047	F5D6E1	5.97286126	12/15/2010	287449.375	3841535.75	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.1	Scrap Bin	None	Heavy wire
F5D6E1-048	F5D6E1	5.623048194	12/14/2010	287424.625	3841545.625	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.1	Scrap Bin	None	Heavy wire surface
F5D6E1-049	F5D6E1	5.33411357	12/15/2010	287443.1451	3841536.005	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Re-enforcment wire
F5D6E1-050	F5D6E1	5.19137132	12/14/2010	287424.25	3841543	RRD	Scrap	N/A	N/A	N/A	1	3	0.2	Scrap Bin	None	Razor wire
F5D6E1-051	F5D6E1	4.879978001	12/14/2010	287425.5	3841543.625	RRD	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Razor wire
F5D6E1-052	F5D6E1	4.642877892	12/14/2010	287424.375	3841544.125	RRD	Scrap	N/A	N/A	N/A	1	3	0.2	Scrap Bin	None	Razor wire
F5D6E1-053	F5D6E1	4.424968988	12/14/2010	287446.375	3841535.75	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared with E1-39
F5D6E1-054	F5D6E1	4.359910585	12/15/2010	287437.875	3841546.625	Cultural Debris	Scrap	N/A	N/A	N/A	5	1	0.2	Scrap Bin	None	5- pieces heavy wire
F5D6E1-055	F5D6E1	3.986522913	12/14/2010	287426.25	3841541.375	RRD	Scrap	N/A	N/A	N/A	2	4	0.1	Scrap Bin	None	2-pieces razor wire
F5D6E1-056	F5D6E1	3.819909157	12/14/2010	287415.125	3841540	RRD	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Comm wire
F5D6E1-057	F5D6E1	3.436714922	12/14/2010	287417.734	3841543.042	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	6" heavy wire
F5D6E1-058	F5D6E1	3	12/14/2010	287411.25	3841542.25	RRD	Scrap	N/A	N/A	N/A	2	3	0.2	Scrap Bin	None	Comm wire and latch w/MRE trash
F5D6E1-059	F5D6E1	999	2/21/2011	287417.0761	3841550.001	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ ASA E2-1 anom# F5D6E2-154 EXA MAG/DIG POLY.
F5D6E1-060	F5D6E1	999	2/16/2011	287430.6443	3841550.014	Cultural Debris	Scrap	N/A	N/A	N/A	2500	48	500	Scrap Bin	None	Lrg amounts ofrazor/barb wire, eng stakes. South side Shd w/ E1-03 (E1-061) Wire Pit. EXA POLY MAG/DIG.
F5D6E1-061	F5D6E1	999	2/17/2011	287422.8292	3841538.473	Cultural Debris	Scrap	N/A	N/A	N/A	600	36	200	Scrap Bin	None	14- eng stakes, large amount of razor/barb wire and wood debris EXA MAG/DIG POLY.
F5D6E2-001	F5D6E2	6581.284746	12/16/2010	287419.2	3841559.8	Cultural Debris	Scrap	N/A	N/A	N/A	5	3	40	Scrap Bin	None	55 gal drum, rust, wire
F5D6E2-002	F5D6E2	2037.716309	12/9/2010	287430.6	3841583	MPPEH	Misc	Other (see comments)	nert Material	Unfuzed	2	4	12	Scrap Bin	None	M 12 Seris Prac Mine and fuze well collar
F5D6E2-003	F5D6E2	2003.469608	12/9/2010	287432.2592	3841582.806	MPPEH	Misc	Other (see comments)	nert Material	Unfuzed	5	0	12	Scrap Bin	None	M 12 Series Prac Mine and 4-mine pieces
F5D6E2-004	F5D6E2	1672.059271	12/9/2010	287430.2	3841581.6	RRD	Scrap	N/A	N/A	N/A	5	6	16	Scrap Bin	None	3-3ft eng stake, propellent can lid, comm wire
F5D6E2-005	F5D6E2	1074.879272	1/4/2011	287437.8	3841562	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	8	Scrap Bin	None	Eng stake BHA
F5D6E2-006	F5D6E2	1025.667358	1/4/2011	287425.2	3841554.6	Cultural Debris	Scrap	N/A	N/A	N/A	3	12	15	Scrap Bin	None	Eng stake, lrg sheet metal , barb wire. BHA
F5D6E2-007	F5D6E2	1017.164245	1/4/2011	287423.8	3841559.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	12	Scrap Bin	None	Eng stake, barb wire BHA
F5D6E2-008	F5D6E2	801.9881544	12/9/2010	287431.8044	3841585.705	RRD	Scrap	N/A	N/A	N/A	1	1	4	Scrap Bin	None	3ft eng stake
F5D6E2-009	F5D6E2	781.9294433	12/16/2010	287419.1258	3841558.046	RRD	Scrap	N/A	N/A	N/A	3	4	10	Scrap Bin	None	Eng stake, wire, barrel parts
F5D6E2-010	F5D6E2	701.73291	1/4/2011	287450	3841579.4	Cultural Debris	Scrap	N/A	N/A	N/A	3	18	150	Scrap Bin	None	6ft auger bit and concrete piping BHA
F5D6E2-011	F5D6E2	624.2397461	1/4/2011	287424.2	3841559	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	15	Scrap Bin	None	Lrg bundle barb wire BHA
F5D6E2-012	F5D6E2	602.3814087	1/4/2011	287424.1142	3841554.901	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd with E2-6 BHA
F5D6E2-013	F5D6E2	549.7709961	12/16/2010	287425.2	3841562	Cultural Debris	Scrap	N/A	N/A	N/A	2	0	1000	Scrap Bin	None	4'x4' concrete culvert, 3ft stake
F5D6E2-014	F5D6E2	547.5993652	12/16/2010	287428	3841562	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shd w/ E2-13
F5D6E2-015	F5D6E2	461.5584678	1/4/2011	287430.5536	3841557.875	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	12	Scrap Bin	None	Eng stake , barb wire BHA
F5D6E2-016	F5D6E2	436.2542419	12/16/2010	287429	3841554.6	RRD	Scrap	N/A	N/A	N/A	7	6	8	Scrap Bin	None	Alum sheet metal, eng stake , and razor wire
F5D6E2-017	F5D6E2	413.006134	12/16/2010	287434.5618	3841552.588	Cultural Debris	Scrap	N/A	N/A	N/A	3	24	10	Scrap Bin	None	BHA 3- pieces sheet alum
F5D6E2-018	F5D6E2	393.8383178	1/4/2011	287439.8	3841563.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	5	Scrap Bin	None	Drum lid and metal molding
F5D6E2-019	F5D6E2	343.2186828	1/4/2011	287440.57	3841562.75	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/E2-18
F5D6E2-020	F5D6E2	315.9983825	1/4/2011	287444	3841579.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	7	Scrap Bin	None	Eng stake
F5D6E2-021	F5D6E2	310.3294067	12/16/2010	287431.4	3841553	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd with E2-16
F5D6E2-022	F5D6E2	252.2489166	1/4/2011	287429.8	3841559	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/E2-15
F5D6E2-023	F5D6E2	243.0098389	12/16/2010	287426.48	3841561.25	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shd with E2-13
F5D6E2-024	F5D6E2	242.0197429	12/9/2010	287429.61	3841583.75	RRD	Scrap	N/A	N/A	N/A	1	1	4	Scrap Bin	None	3ft eng stake
F5D6E2-025	F5D6E2	226.1698347	1/4/2011	287444.59	3841580	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/E2-20
F5D6E2-026	F5D6E2	210.3599548	12/7/2010	287416.3968	3841597.673	RRD	Scrap	N/A	N/A	N/A	4	18	3	Scrap Bin	None	1 empty ammo can 1-rtb collar 2-lifting lugs
F5D6E2-027	F5D6E2	203.8531036	12/16/2010	287450	3841556.8	RRD	Scrap	N/A	N/A	N/A	1	24	500	Scrap Bin	None	5ft tank tread BHA
F5D6E2-028	F5D6E2	201.071823	12/16/2010	287430.6	3841553.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shd w/E2-16
F5D6E2-029	F5D6E2	184.8997285	1/4/2011	287423.09	3841556	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	12	Scrap Bin	None	Eng stake anddd barb wire BHA
F5D6E2-030	F5D6E2	157.7083448	1/4/2011	287430	3841556.75	Cultural Debris	Scrap	N/A	N/A	N/A	2	18	2	Scrap Bin	None	2xlrq sheet alum.
F5D6E2-031	F5D6E2	157.2303314	12/16/2010	287448.2	3841557.4	RRD	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	Razor wire
F5D6E2-032	F5D6E2	156.3493378	1/4/2011	287430	3841555.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	1	Scrap Bin	None	Barb wire BHA
F5D6E2-033	F5D6E2	145.8100586	12/16/2010	287440	3841551.4	RRD	Scrap	N/A	N/A	N/A	2	18	5	Scrap Bin	None	Eng stake and 6x2 piece of metal
F5D6E2-034	F5D6E2	140.0897429	12/9/2010	287432.8	3841583.75	MPPEH	Misc	Other (see comments)	N/A	N/A	6	6	1	Scrap Bin	None	6-misc pieces of Prac Mine
F5D6E2-035	F5D6E2	138.3795319	12/9/2010	287432.3729	3841588.889	MPPEH	Misc	Other (see comments)	N/A	N/A	6	1	1.5	Scrap Bin	None	6-misc pieces of Prac Mine
F5D6E2-036	F5D6E2	124.4134826	12/16/2010	287436.8	3841550.8	MPPEH	Small Arms Br.	Small Arms Brass	N/A	N/A	3	1	0.1	Scrap Bin	None	3-5.56 mm blank expended
F5D6E2-037	F5D6E2	121.1397853	12/16/2010	287444.3408	3841558.756	Cultural Debris	Scrap	N/A	N/A	N/A	2	20	1200	Scrap Bin	None	2- lrg pieces re-inforced concrete BHA
F5D6E2-038	F5D6E2	118.8314666	1/4/2011	287429.6	3841552.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	2	Scrap Bin	None	Lrg sheet metal
F5D6E2-039	F5D6E2	94.790802	12/16/2010	287432.8	3841550	RRD	Scrap	N/A	N/A	N/A	1	18	4	Scrap Bin	None	3ft eng stake BHA
F5D6E2-040	F5D6E2	89.22837063	12/16/2010	287426.2	3841564.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shd w/E2-13
F5D6E2-041	F5D6E2	74.26978302	12/16/2010	287428.6	3841559	RRD	Scrap	N/A	N/A	N/A	1	4	5	Scrap Bin	None	Eng stake
F5D6E2-042	F5D6E2	63.94713593	1/4/2011	287421.6	3841557.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	2	Scrap Bin	None	Barb wire BHA
F5D6E2-043	F5D6E2	63.55281827	12/8/2010	287417.4202	3841572.998	RRD	Misc	Other (see comments)	N/A	N/A	1	1	1.5	Scrap Bin	None	4ft carrige bolt
F5D6E2-044	F5D6E2	49.48403548	12/9/2010	287442.2	3841591.2	RRD	Scrap	N/A	N/A	N/A	9	24	15		None	Ammo Can with 8 lift lugs in it
F5D6E2-045	F5D6E2	46.92375564	12/16/2010	287441.8	3841551.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	20	Scrap Bin	None	1'x2' blkck concrete and 8ft barb wire (BHA-backhoe assisted)
F5D6E2-046	F5D6E2	46.57797621	12/8/2010	287418.2	3841573.2	SHD	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	shared E2-43
F5D6E2-047	F5D6E2	45.14823146	1/4/2011	287442.64	3841578.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	3	Scrap Bin	None	Re-bar
F5D6E2-048	F5D6E2	45.10081863	1/4/2011	287427.8	3841557.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	2	Scrap Bin	None	Sheet metal and wire
F5D6E2-049	F5D6E2	42.45285415	12/8/2010	287416.2	3841567.2	MPPEH	Misc	Other (see comments)	N/A	N/A	2	10	0.1	Scrap Bin	None	2-5.56 blank exp.
F5D6E2-050	F5D6E2	41.27986525	12/8/2010	287418.8131	3841572.089	RRD	Misc	Other (see comments)	N/A	N/A	3	3	3	Scrap Bin	None	3-lugs
F5D6E2-051	F5D6E2	40.44554901	12/16/2010	287442	3841550	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	Previously dug contact from Grid F5D6E1.
F5D6E2-052	F5D6E2	39.1167221	12/8/2010	287425.6538	3841570.385	RRD	Misc	Other (see comments)	N/A	N/A	1	18	2	Scrap Bin	None	Ammo can lid

Anomaly ID	Grid	Amplitude	Dlg Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6E2-053	F5D6E2	37.67372513	12/8/2010	287416.1413	3841568.406	RRD	Misc	Other (see comments)	N/A	N/A	1	3	1.5	Scrap Bin	None	4ft carriage bolt
F5D6E2-054	F5D6E2	36.19992447	1/4/2011	287449.2	3841554.4	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/E2-58 BHA
F5D6E2-055	F5D6E2	32.09213256	1/4/2011	287450	3841576.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	40	4	Scrap Bin	None	1ft x 1ft steel plate and wire BHA
F5D6E2-056	F5D6E2	30.69406509	12/8/2010	287412	3841577	RRD	Misc	Other (see comments)	N/A	N/A	2	0	0.2	Scrap Bin	None	Tent sttake and comm wire
F5D6E2-057	F5D6E2	29.6305065	12/16/2010	287433.5384	3841567.029	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Mettal canteen cup holder
F5D6E2-058	F5D6E2	27.69910622	1/4/2011	287449.0029	3841581.697	Cultural Debris	Scrap	N/A	N/A	N/A	1	48	30	Scrap Bin	None	12 ft steel pipe BHA
F5D6E2-059	F5D6E2	25.65942694	1/4/2011	287449.07	3841577.75	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/E2-10 BHA
F5D6E2-060	F5D6E2	25.21419524	12/8/2010	287429.5047	3841572.012	RRD	Misc	Other (see comments)	N/A	N/A	6	8	4	Scrap Bin	None	4-lugs 2-nails
F5D6E2-061	F5D6E2	23.83497046	1/4/2011	287447.8	3841577.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/E2-10 BHA
F5D6E2-062	F5D6E2	23.60354041	12/8/2010	287438.5985	3841583.915	RRD	Misc	Other (see comments)	N/A	N/A	1	1	1	Scrap Bin	None	1-lug
F5D6E2-063	F5D6E2	21.66867255	12/16/2010	287433.2	3841553.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	SHD with E2-17 BHA
F5D6E2-064	F5D6E2	21.59794806	12/8/2010	287406	3841565.8	RRD	Misc	Other (see comments)	N/A	N/A	2	2	1	Scrap Bin	None	Steel tent stake and comm wire.
F5D6E2-065	F5D6E2	21.22834481	1/4/2011	287428.42	3841556.75	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd/E2-48
F5D6E2-066	F5D6E2	20.5013504	1/4/2011	287435	3841575.4	RRD	Scrap	N/A	N/A	N/A	7	12	7	Scrap Bin	None	7-lifting lugs
F5D6E2-067	F5D6E2	20.38440514	12/16/2010	287449.5714	3841550.342	Cultural Debris	Scrap	N/A	N/A	N/A	3	24	4	Scrap Bin	None	4ft grounding rod, re-inf wire, heavy wire BHA
F5D6E2-068	F5D6E2	19.34154319	12/8/2010	287428.2	3841579.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1		None	Barrel bung ring
F5D6E2-069	F5D6E2	18.34687233	12/8/2010	287432	3841578.4	RRD	Misc	Other (see comments)	N/A	N/A	1	2	0.2	Scrap Bin	None	Lrg washer
F5D6E2-070	F5D6E2	16.91395949	12/8/2010	287405.2	3841565.8	SHD	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E2-64
F5D6E2-071	F5D6E2	16.77983888	12/16/2010	287441.05	3841561.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	1	Scrap Bin	None	Lag bolt
F5D6E2-072	F5D6E2	16.50792211	12/16/2010	287433.33	3841551.5	RRD	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	Razor wire
F5D6E2-073	F5D6E2	16.0756513	12/16/2010	287433.77	3841550.75	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.1	Scrap Bin	None	Lrg nail
F5D6E2-074	F5D6E2	15.71850804	12/7/2010	287412.31	3841596.5	RRD	Scrap	N/A	N/A	N/A	3	6	1.5	Scrap Bin	None	3-lifting lugs and banding
F5D6E2-075	F5D6E2	15.07415485	12/16/2010	287436	3841569.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	5	Scrap Bin	None	2"x8' metal molding
F5D6E2-076	F5D6E2	14.97637844	12/8/2010	287428.9092	3841570.861	RRD	Misc	Other (see comments)	N/A	N/A	3	8	3	Scrap Bin	None	3 lugs
F5D6E2-077	F5D6E2	14.90538406	12/16/2010	287422	3841560.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	Wire
F5D6E2-078	F5D6E2	14.52792211	1/4/2011	287429.04	3841551.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Wire
F5D6E2-079	F5D6E2	14.03905868	12/8/2010	287409.6115	3841554.033	MPPEH	Misc	Other (see comments)	N/A	N/A	1	4	0.1	Scrap Bin	None	1 artillery primer
F5D6E2-080	F5D6E2	13.76955986	12/7/2010	287419.6	3841592	MPPEH	Misc	Other (see comments)	N/A	N/A	1	2	0.2	Scrap Bin	None	1-expanded 5.56 blank
F5D6E2-081	F5D6E2	13.60474596	1/13/2011	287444.15	3841559.75	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	50	Left in Place	None	
F5D6E2-082	F5D6E2	13.22480774	12/7/2010	287420.9736	3841591.704	RRD	Scrap	N/A	N/A	N/A	2	2	0.5	Scrap Bin	None	1 wrench comm wre and cable
F5D6E2-083	F5D6E2	13.13939321	1/13/2011	287445.5348	3841562.196	Cultural Debris	Scrap	N/A	N/A	N/A	1	48	750	Left in Place	None	
F5D6E2-084	F5D6E2	13.04800688	1/4/2011	287438.4848	3841560.206	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Barb wire
F5D6E2-085	F5D6E2	13.01484966	1/4/2011	287443.6	3841568	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	1	Scrap Bin	None	Heavy wire and lrg nail
F5D6E2-086	F5D6E2	12.91218376	12/7/2010	287413.2413	3841593.921	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.1	Scrap Bin	None	Bucket handle
F5D6E2-087	F5D6E2	12.70485306	1/13/2011	287446	3841560.6	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	SHD with E2-83
F5D6E2-088	F5D6E2	12.23685646	2/15/2011	287429.5018	3841550.313	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	SHD with E1-27
F5D6E2-089	F5D6E2	11.90911388	12/8/2010	287410.8	3841561.2	RRD	Misc	Other (see comments)	N/A	N/A	1	1	1	Scrap Bin	None	1-lug
F5D6E2-090	F5D6E2	11.86133194	1/13/2011	287447.4	3841559	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	280	Left in Place	None	
F5D6E2-091	F5D6E2	11.00960732	12/8/2010	287426.6	3841583	RRD	Misc	Other (see comments)	N/A	N/A	1	2	1	Scrap Bin	None	Steel tent stake
F5D6E2-092	F5D6E2	10.52888088	12/16/2010	287433.311	3841563.333	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	30	Scrap Bin	None	1x1 re-inf concrete
F5D6E2-093	F5D6E2	10.43877483	12/16/2010	287416.6885	3841563.262	RRD	Scrap	N/A	N/A	N/A	1	2	1	Scrap Bin	None	Lift lug
F5D6E2-094	F5D6E2	10.32978531	1/4/2011	287421.67	3841559	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	1	Scrap Bin	None	Razor wire
F5D6E2-095	F5D6E2	10.21987915	12/16/2010	287447.7805	3841552.843	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	35	Scrap Bin	None	12 ft 1"dia steel pipe BHA
F5D6E2-096	F5D6E2	9.766574857	1/13/2011	287430.2	3841561.2	RRD	Scrap	N/A	N/A	N/A	1	36	2	Left in Place	None	Ammo Can Lid
F5D6E2-097	F5D6E2	9.736326218	12/16/2010	287431.6	3841552	RRD	Scrap	N/A	N/A	N/A	1	8	0.5	Scrap Bin	None	Razor wire
F5D6E2-098	F5D6E2	9.661349294	12/16/2010	287433.311	3841558.415	Cultural Debris	Scrap	N/A	N/A	N/A	2	18	0.2	Scrap Bin	None	Spike andwire
F5D6E2-099	F5D6E2	9.609838881	1/13/2011	287444.56	3841561.25	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared with E2-83
F5D6E2-100	F5D6E2	9.566900253	12/8/2010	287426.8	3841584.4	SHD	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E2-91
F5D6E2-101	F5D6E2	9.475975034	12/16/2010	287433.4	3841555.2	Cultural Debris	Scrap	N/A	N/A	N/A	7	6	3	Scrap Bin	None	Spikes
F5D6E2-102	F5D6E2	9.301968573	1/4/2011	287447.2	3841553.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Heavy wire
F5D6E2-103	F5D6E2	9.266783708	1/4/2011	287449.8	3841586.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.3	Scrap Bin	None	Hea y wire
F5D6E2-104	F5D6E2	9.148266043	12/7/2010	287412.94	3841595.75	RRD	Scrap	N/A	N/A	N/A	1	12	0.5	Scrap Bin	None	1 lifting lug
F5D6E2-105	F5D6E2	8.694262503	12/8/2010	287405.234	3841555.419	RRD	Misc	Other (see comments)	N/A	N/A	1	2	0.5	Scrap Bin	None	1-safety fork
F5D6E2-106	F5D6E2	8.519185061	12/16/2010	287433.8	3841556.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Heavy wire
F5D6E2-107	F5D6E2	8.256857872	1/4/2011	287446.2	3841575.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	0.1	Scrap Bin	None	Nail, wire
F5D6E2-108	F5D6E2	8.255711553	12/16/2010	287447.6	3841554.4	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	SHD with E2-95 BHA
F5D6E2-109	F5D6E2	8.099203234	12/7/2010	287412.4	3841593.5	SHD	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E2-86
F5D6E2-110	F5D6E2	7.693684101	12/16/2010	287449.2	3841586	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	SHD with E2-95 BHA
F5D6E2-111	F5D6E2	7.633212089	1/4/2011	287445.8	3841577	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Bucket handle
F5D6E2-112	F5D6E2	7.594745964	12/16/2010	287427.11	3841559.75	MPPEH	Small Arms Br:Small Arms Brass		N/A	N/A	3	4	0.1	Scrap Bin	None	3-5.56mm blank exp
F5D6E2-113	F5D6E2	7.439766086	12/9/2010	287432.33	3841586.75	No Contact	Shared Target	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E2-8
F5D6E2-114	F5D6E2	7.268794674	12/16/2010	287450	3841585.25	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6E2-115	F5D6E2	7.267621405	12/16/2010	287439.27	3841565	RRD	Scrap	N/A	N/A	N/A	1	0	0.5	Scrap Bin	None	Bunch of razor wire
F5D6E2-116	F5D6E2	7.09317255	12/8/2010	287442.6	3841593.4	RRD	Misc	Other (see comments)	N/A	N/A	1	2	1	Scrap Bin	None	1-lug
F5D6E2-117	F5D6E2	6.517261163	12/16/2010	287436.85	3841570.25	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	SHD with E2-75
F5D6E2-118	F5D6E2	6.058774832	12/8/2010	287415.66	3841563.5	RRD	Misc	Other (see comments)	N/A	N/A	2	0	0.1	Scrap Bin	None	15 ft comm wire 1-tent stakes
F5D6E2-119	F5D6E2	5.914775847	12/16/2010	287434.4765	3841557.932	Cultural Debris	Scrap	N/A	N/A	N/A	3	8	0.5	Scrap Bin	None	Nail wood and wire
F5D6E2-120	F5D6E2	5.722612858	12/8/2010	287415.4	3841571	MPPEH	Misc	Other (see comments)	N/A	N/A	1	4	0.2	Scrap Bin	None	7-exp blank
F5D6E2-121	F5D6E2	5.698667572	12/8/2010	287424.73	3841569.5	SHD	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E2-52
F5D6E2-122	F5D6E2	5.628495127	12/7/2010	287409.82	3841599.5	RRD	Scrap	N/A	N/A	N/A	4	12	2	Scrap Bin	None	3-lifting lugs & 8ft banding
F5D6E2-123	F5D6E2	5.618577994	12/8/2010	287418.87	3841571	RRD	Misc	Other (see comments)	N/A	N/A	2	3	0.2	Scrap Bin	None	1-tent stake and comm wire
F5D6E2-124	F5D6E2	5.567056651	12/8/2010	287401	3841577.8	RRD	Misc	Other (see comments)	N/A	N/A	1	3	0.1	Scrap Bin	None	Bundle of comm wire

Anomaly ID	Grid	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6E2-125	F5D6E2	5.499965491	1/4/2011	287450	3841583.75	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/D2-58 BHA
F5D6E2-126	F5D6E2	5.415884018	12/7/2010	287430.4	3841599.6	RRD	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Alum tent stake
F5D6E2-127	F5D6E2	5.369008891	12/16/2010	287419.25	3841562	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	0.2	Scrap Bin	None	Nail and soda can
F5D6E2-128	F5D6E2	5.262054443	12/8/2010	287405.4164	3841577.452	MPPEH	Misc	Other (see comments)	N/A	N/A	1	1	0.1	Scrap Bin	None	Prac 40mm base
F5D6E2-129	F5D6E2	5.01982832	12/8/2010	287402.3522	3841570.74	MPPEH	Misc	Other (see comments)	N/A	N/A	1	1	0.1	Scrap Bin	None	40mm prac base
F5D6E2-130	F5D6E2	4.95881176	12/8/2010	287402.0604	3841568.223	RRD	Misc	Other (see comments)	N/A	N/A	7	2	0.5	Scrap Bin	None	6inch chain,cotter pin wire
F5D6E2-131	F5D6E2	4.902727604	12/8/2010	287416	3841557.6	RRD	Misc	Other (see comments)	N/A	N/A	6	2	0.1	Scrap Bin	None	6 pieces assorted wire
F5D6E2-132	F5D6E2	4.592186927	12/7/2010	287409.2	3841597.2	RRD	Scrap	N/A	N/A	N/A	2	0	0.4	Scrap Bin	None	Bundle comm wire surface 1-tent stake
F5D6E2-133	F5D6E2	4.487961556	12/9/2010	287441.61	3841589.75	No Contact	Shared Target	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E2-44
F5D6E2-134	F5D6E2	4.37451601	12/7/2010	287421.8	3841599.4	MPPEH	Misc	Other (see comments)	N/A	N/A	6	6	0.5	Scrap Bin	None	6 arty primers
F5D6E2-135	F5D6E2	4.269838881	12/16/2010	287442.11	3841561.25	RRD	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	Razor wire
F5D6E2-136	F5D6E2	4.219239235	12/16/2010	287440.2	3841568	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6E2-137	F5D6E2	3.994140863	12/8/2010	287409.3197	3841564.429	RRD	Misc	Other (see comments)	N/A	N/A	1	0	0.1	Scrap Bin	None	Comm wire surface
F5D6E2-138	F5D6E2	3.989607712	1/4/2011	287448.11	3841583	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/E2-58 BHA
F5D6E2-139	F5D6E2	3.982609748	12/8/2010	287419.9767	3841569.075	RRD	Misc	Other (see comments)	N/A	N/A	2	3	1	Scrap Bin	None	1- lug , 1-hinge
F5D6E2-140	F5D6E2	3.908189773	12/8/2010	287403	3841578.6	RRD	Misc	Other (see comments)	N/A	N/A	1	1	0.1	Scrap Bin	None	6 ft comm wire
F5D6E2-141	F5D6E2	3.775820253	1/4/2011	287445	3841571.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/E2-143
F5D6E2-142	F5D6E2	3.657893181	12/16/2010	287440.4	3841559	RRD	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Comm wire
F5D6E2-143	F5D6E2	3.457261163	1/4/2011	287444.6	3841570.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Retaining pin
F5D6E2-144	F5D6E2	3.295508861	12/8/2010	287415.7287	3841581.104	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	0.1	Scrap Bin	None	Pepsi can
F5D6E2-145	F5D6E2	3.187751845	12/8/2010	287422.5	3841584.5	MPPEH	Misc	Other (see comments)	N/A	N/A	2	0	0.1	Scrap Bin	None	2-5.566 exp blank
F5D6E2-146	F5D6E2	3.068861006	12/8/2010	287436.2	3841598.8	MPPEH	Misc	Other (see comments)	N/A	N/A	2	3	0.1	Scrap Bin	None	2- 5.56 exp blnk
F5D6E2-147	F5D6E2	3.056019783	12/8/2010	287421.6	3841566.6	RRD	Misc	Other (see comments)	N/A	N/A	4	2	0.2	Scrap Bin	None	25 ft comm wire 3-pieces ammo can
F5D6E2-148	F5D6E2	3.039089398	12/16/2010	287440	3841566.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	Barb wire
F5D6E2-149	F5D6E2	3.019261303	12/8/2010	287441	3841586.8	RRD	Misc	Other (see comments)	N/A	N/A	1	0	0.1	Scrap Bin	None	8ft comm wire
F5D6E2-150	F5D6E2	3.018266043	12/7/2010	287416.67	3841595.75	MPPEH	Misc	Other (see comments)	N/A	N/A	4	5	0.1	Scrap Bin	None	4 expended 5.56 blanks
F5D6E2-151	F5D6E2	3.014980157	12/16/2010	287439.8	3841570.2	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6E2-152	F5D6E2	3.009077225	12/8/2010	287427.2	3841570.2	MPPEH	Misc	Other (see comments)	N/A	N/A	1	2	0.1	Scrap Bin	None	Piece of fuze collar.
F5D6E2-153	F5D6E2	3.008667572	12/8/2010	287423.09	3841569.5	RRD	Misc	Other (see comments)	N/A	N/A	1	1	0.1	Scrap Bin	None	Bundle comm wire
F5D6E2-154	F5D6E2		2/21/2011	287417.4271	3841550	Cultural Debris	Scrap	N/A		N/A	700	24	1000	Scrap Bin	None	ASA E2-1 Eng stakes, razor wire, 8ft metal culvert, wood debris, nails and bolts. ASA E1-1 was Shd. EXA MAG/DIG POLY.
			2/15/2011													
F5D6E2-155	F5D6E2		2/15/2011	287438.8252	3841557.976	Cultural Debris	Scrap	N/A		N/A	218	24	815	Scrap Bin	None	15 rolls of razor wire, 1-55 gal drum, 2- pipe, 200- heavy wire. BHA MAG/DIG POLY Completed on 01/12/2011.
F5D6E2-156	F5D6E2		3/16/2011	287450	3841561.982	Cultural Debris	Scrap	N/A	N/A	N/A	675	60	29200	Scrap Bin	None	7 cyds reinf concrete, metal culvert, pipe,rebar,reinf wire,metal buckets,razor/barb wire. ASA E2-03 MAG/DIG start 0700 031411, comp 0915 031611.
F5D6E3-001	F5D6E3	607.7839965	12/8/2010	287434.6	3841605.4	RRD	Misc	Other (see comments)	N/A	N/A	1	0	6	Scrap Bin	None	6ft eng stake 2ft in ground
F5D6E3-002	F5D6E3	534.493225	12/8/2010	287433.4	3841606	SHD	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E3-1
F5D6E3-003	F5D6E3	137.8628539	12/9/2010	287415.6	3841612.2	RRD	Scrap	N/A	N/A	N/A	1	1	0.1	Scrap Bin	None	3ft comm wire orig anomaly not there
F5D6E3-004	F5D6E3	87.58998291	12/8/2010	287433.6601	3841604.56	SHD	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E3-1
F5D6E3-005	F5D6E3	82.61796568	12/9/2010	287431.2	3841626.6	RRD	Scrap	N/A	N/A	N/A	15	10	15	Scrap Bin	None	15-lugs
F5D6E3-006	F5D6E3	68.24723388	12/9/2010	287440.5159	3841612.528	RRD	Scrap	N/A	N/A	N/A	17	12	14	Scrap Bin	None	14-lugs, 3-fiber rtbc
F5D6E3-007	F5D6E3	67.819458	12/9/2010	287419.4	3841605.4	No Contact	Shared Target	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E3-39
F5D6E3-008	F5D6E3	56.60607145	2/28/2011	287447.8	3841603	RRD	Scrap	N/A	N/A	N/A	1	10	4	Consolidation Point	None	Prop charge can lid. Anomaly was dug and cleared on 02 Feb 2011.
F5D6E3-009	F5D6E3	53.85368043	12/9/2010	287418.3392	3841605.168	RRD	Scrap	N/A	N/A	N/A	1	12	2	Scrap Bin	None	2ft eng stake
F5D6E3-010	F5D6E3	50.10494873	12/9/2010	287439.9054	3841611.4	RRD	Scrap	N/A	N/A	N/A	20	18	14	Scrap Bin	None	10-lugs, 8-metal rtbc, 2-fiber rtbc.
F5D6E3-011	F5D6E3	42.11136245	12/7/2010	287426.2	3841605.4	RRD	Scrap	N/A	N/A	N/A	18	18	10	Scrap Bin	None	Projo lifting lugs
F5D6E3-012	F5D6E3	41.48694991	12/9/2010	287438.8	3841611.4	No Contact	Shared Target	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E3-10
F5D6E3-013	F5D6E3	34.39702605	12/9/2010	287433.8	3841630.4	RRD	Scrap	N/A	N/A	N/A	3	4	3	Scrap Bin	None	3- lugs and MRE trash
F5D6E3-014	F5D6E3	32.69705662	12/9/2010	287443.1347	3841632.284	MPPEH	Flare	M127A1, Star Parachute	Empty	N/A	1	0	0.5	Scrap Bin	None	Expended signal flare body
F5D6E3-015	F5D6E3	31.2827297	12/9/2010	287414.6928	3841613.456	RRD	Scrap	N/A	N/A	N/A	2	3	0.5	Scrap Bin	None	2- RL-28 reels
F5D6E3-016	F5D6E3	29.39847907	12/9/2010	287440.4496	3841630.262	RRD	Scrap	N/A	N/A	N/A	3	4	3	Scrap Bin	None	3- lugs
F5D6E3-017	F5D6E3	21.92106882	12/9/2010	287432.7921	3841632.483	RRD	Scrap	N/A	N/A	N/A	3	10	3	Scrap Bin	None	3-lugs
F5D6E3-018	F5D6E3	20.60390432	12/9/2010	287422.6817	3841616.207	RRD	Scrap	N/A	N/A	N/A	1	1	1	Scrap Bin	None	1-lug
F5D6E3-019	F5D6E3	19.79685211	12/7/2010	287419	3841601.6	RRD	Scrap	N/A	N/A	N/A	2	6	2	Scrap Bin	None	2- lifting lugs
F5D6E3-020	F5D6E3	17.60986518	12/9/2010	287444.8	3841626.6	RRD	Scrap	N/A	N/A	N/A	4	12	4	Scrap Bin	None	4-lugs
F5D6E3-021	F5D6E3	17.21109199	12/9/2010	287419.6	3841606.8	RRD	Scrap	N/A	N/A	N/A	10	8	10	Scrap Bin	None	10 lugs
F5D6E3-022	F5D6E3	16.6428585	12/7/2010	287419.8	3841600	SHD	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E3-19
F5D6E3-023	F5D6E3	16.26851049	12/7/2010	287419.6751	3841602.28	RRD	Scrap	N/A	N/A	N/A	1	6	1	Scrap Bin	None	1 lifting lug
F5D6E3-024	F5D6E3	15.48017078	12/9/2010	287439.886	3841616.472	MPPEH	Flare	M127A1, Star Parachute	Empty	N/A	1	1	0.5	Scrap Bin	None	Expended signal flare body
F5D6E3-025	F5D6E3	15.24999746	12/9/2010	287420.0629	3841609.345	RRD	Scrap	N/A	N/A	N/A	2	10	5	Scrap Bin	None	2ft eng stake and 100ft comm wire
F5D6E3-026	F5D6E3	13.79745674	12/8/2010	287420.4	3841608.4	RRD	Misc	Other (see comments)	N/A	N/A	1	2	1	Scrap Bin	None	1-lug
F5D6E3-027	F5D6E3	13.72670555	12/9/2010	287416.6	3841606	MPPEH	Flare	Other (see comments)	Empty	N/A	1	3	0.5	Scrap Bin	None	M-121 A1 empty signal flare launcher in steel shipping tube
F5D6E3-028	F5D6E3	12.93749249	12/9/2010	287432.527	3841612.362	RRD	Scrap	N/A	N/A	N/A	2	2	2	Scrap Bin	None	2-lugs
F5D6E3-029	F5D6E3	10.6769616	12/9/2010	287444.4606	3841627.61	RRD	Scrap	N/A	N/A	N/A	6	12	6	Scrap Bin	None	6-lugs
F5D6E3-030	F5D6E3	10.61514425	12/9/2010	287443.3999	3841638.45	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No Contact all instruments
F5D6E3-031	F5D6E3	10.56546497	12/7/2010	287425.2	3841600.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	4	Scrap Bin	None	Nails banding from pallet, wood 5 gallon bucket
F5D6E3-032	F5D6E3	10.01551167	12/9/2010	287427.5877	3841616.439	RRD	Scrap	N/A	N/A	N/A	1	3	1	Scrap Bin	None	1-lug

Anomaly ID	Grid	Amplitude	Dlg Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6E3-033	F5D6E3	10.00954342	12/7/2010	287424.6	3841606.8	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	NC w/ all instruments
F5D6E3-034	F5D6E3	9.560854179	12/9/2010	287432.8554	3841611.4	RRD	Scrap	N/A	N/A	N/A	1	2	1	Scrap Bin	None	1-lug
F5D6E3-035	F5D6E3	9.529550551	12/9/2010	287434.8	3841616.8	RRD	Scrap	N/A	N/A	N/A	2	2	0.2	Scrap Bin	None	1-alum tent stake, metal buckle
F5D6E3-036	F5D6E3	9.017164032	12/9/2010	287433.0573	3841610.174	RRD	Scrap	N/A	N/A	N/A	2	3	0.3	Scrap Bin	None	1- latch , comm wire
F5D6E3-037	F5D6E3	8.178331766	12/7/2010	287425.1536	3841607.6	RRD	Scrap	N/A	N/A	N/A	6	14	3	Scrap Bin	None	Rotating band covers and 2 lifting lugs
F5D6E3-038	F5D6E3	7.74238182	12/9/2010	287431.5958	3841625.08	No Contact	Shared Target	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E3-5
F5D6E3-039	F5D6E3	7.634230135	12/9/2010	287437.8	3841612.8	RRD	Scrap	N/A	N/A	N/A	2	10	20	Scrap Bin	None	2- lrg wooden arty box pieces
F5D6E3-040	F5D6E3	7.60559751	12/9/2010	287440.3086	3841609.88	RRD	Scrap	N/A	N/A	N/A	1	3	1	Scrap Bin	None	1-lug
F5D6E3-041	F5D6E3	7.577936985	12/9/2010	287433.9855	3841622.24	RRD	Scrap	N/A	N/A	N/A	1	3	1	Scrap Bin	None	1-lug
F5D6E3-042	F5D6E3	7.396709916	12/9/2010	287443.6	3841611.4	RRD	Scrap	N/A	N/A	N/A	1	2	0.2	Scrap Bin	None	1-alum tent stake
F5D6E3-043	F5D6E3	6.793264876	12/9/2010	287449.9314	3841645.601	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No Contact all instruments
F5D6E3-044	F5D6E3	6.708717822	12/8/2010	287435.2	3841601.6	SHD	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E3-52
F5D6E3-045	F5D6E3	6.658903938	12/9/2010	287430.1734	3841624.958	RRD	Scrap	N/A	N/A	N/A	3	14	2.2	Scrap Bin	None	2-lugs, 1-tent alum tent stake
F5D6E3-046	F5D6E3	6.563411712	12/9/2010	287431.2	3841613	RRD	Scrap	N/A	N/A	N/A	1	3	1	Scrap Bin	None	1-lug
F5D6E3-047	F5D6E3	6.550932242	12/9/2010	287426.9622	3841617.48	RRD	Scrap	N/A	N/A	N/A	2	3	1	Scrap Bin	None	1-lug, comm wire
F5D6E3-048	F5D6E3	6.521656883	12/9/2010	287440.7476	3841628.881	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No Contact all instruments
F5D6E3-049	F5D6E3	6.411997794	12/9/2010	287415.2	3841609.2	RRD	Scrap	N/A	N/A	N/A	12	8	0.3	Scrap Bin	None	10-nails, 2-hinges
F5D6E3-050	F5D6E3	5.872897822	12/9/2010	287440.1704	3841613.68	No Contact	Shared Target	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E3-6
F5D6E3-051	F5D6E3	5.21530389	12/9/2010	287424	3841615.2	RRD	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	Comm wire
F5D6E3-052	F5D6E3	5.146138188	12/8/2010	287435.8	3841602.2	RRD	Misc	Other (see comments)	N/A	N/A	1	2	1	Scrap Bin	None	Fuze wrench
F5D6E3-053	F5D6E3	4.853334425	12/9/2010	287425.8	3841613.6	RRD	Scrap	N/A	N/A	N/A	17	10	3	Scrap Bin	None	14-fiber rtbc, 2-metal rtbc, 25ft banding material
F5D6E3-054	F5D6E3	4.744143759	12/8/2010	287433.7236	3841607.6	SHD	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E3-1
F5D6E3-055	F5D6E3	4.637264312	12/7/2010	287430.2728	3841602.881	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.2	Scrap Bin	None	Coupler fitting
F5D6E3-056	F5D6E3	4.616559087	12/9/2010	287421.1303	3841609.12	RRD	Scrap	N/A	N/A	N/A	2	4	1	Scrap Bin	None	1-lug, comm wire
F5D6E3-057	F5D6E3	4.532858262	12/9/2010	287410.6	3841606.8	RRD	Scrap	N/A	N/A	N/A	1	1	0.1	Scrap Bin	None	4ft comm wire
F5D6E3-058	F5D6E3	4.212646263	12/9/2010	287432.0297	3841613.887	RRD	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Bundle comm wire
F5D6E3-059	F5D6E3	4.082511424	12/9/2010	287436.6	3841635.8	RRD	Scrap	N/A	N/A	N/A	1	12	15	Scrap Bin	None	1-lrg wooddn arty projo box pieces
F5D6E3-060	F5D6E3	3.913812945	12/9/2010	287442.6	3841623.6	RRD	Scrap	N/A	N/A	N/A	2	1	0.1	Scrap Bin	None	comm wire, metal clip
F5D6E3-061	F5D6E3	3.663143873	12/9/2010	287441.2804	3841613.68	No Contact	Shared Target	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E3-6
F5D6E3-062	F5D6E3	3.49938169	12/9/2010	287430.1659	3841629.641	RRD	Scrap	N/A	N/A	N/A	2	2	0.1	Scrap Bin	None	Heavy gage wire, comm wire
F5D6E3-063	F5D6E3	3.444854519	12/8/2010	287424.0719	3841608.36	RRD	Misc	Other (see comments)	N/A	N/A	1	10	5	Scrap Bin	None	Lrg wooden box top
F5D6E3-064	F5D6E3	3.399308615	12/9/2010	287448.2588	3841642.922	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	1-nail
F5D6E3-065	F5D6E3	3.20534997	12/9/2010	287412.2	3841606.8	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No Contact with all instruments
F5D6E3-066	F5D6E3	3.139359045	12/9/2010	287437.3104	3841613.68	No Contact	Shared Target	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with E3-39
F5D6E3-067	F5D6E3	3.119563694	12/7/2010	287416.9469	3841600.561	RRD	Scrap	N/A	N/A	N/A	10	8	2	Scrap Bin	None	8 fiberglass rtb covers 2-metal rtb covers.
F5D6E3-068	F5D6E3	3.055537813	12/7/2010	287426.5719	3841608.36	RRD	Scrap	N/A	N/A	N/A	1	10	0.1	Scrap Bin	None	4 ft length comm wire
F5D6E3-069	F5D6E3	3.047281692	12/7/2010	287430.2	3841607.6	RRD	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	1 ft comm wire
F5D6E3-070	F5D6E3	3.015134753	12/7/2010	287430.3167	3841601.52	RRD	Scrap	N/A	N/A	N/A	1	6	2	Scrap Bin	None	Bundle of comm wire
F5D6F1-001	F5D6F1	7179.54248	12/14/2010	287473.25	3841543.125	Cultural Debris	Scrap	N/A	N/A	N/A	2	5	300	Left in Place	None	55 gal drum filled with dirt put on plastic. Drum end
F5D6F1-002	F5D6F1	771.9621464	12/13/2010	287493.8313	3841529.752	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.5	Scrap Bin	None	Barbed fence wire
F5D6F1-003	F5D6F1	262.5975494	12/14/2010	287478.5	3841535.75	RRD	Scrap	N/A	N/A	N/A	5	24	100	Scrap Bin	None	Veh frame part , 2-jeep seats, 2- metal posts
F5D6F1-004	F5D6F1	244.5192184	12/14/2010	287468.75	3841547	RRD	Scrap	N/A	N/A	N/A	1	3	3	Scrap Bin	None	2 ft eng stake
F5D6F1-005	F5D6F1	217.8717833	12/14/2010	287468.75	3841547.625	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared with F1-4
F5D6F1-006	F5D6F1	168.364729	12/14/2010	287469.5	3841539.625	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	7	Scrap Bin	None	1 ft length bar stock
F5D6F1-007	F5D6F1	158.626471	12/14/2010	287464.359	3841546.93	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	80	Scrap Bin	None	2ft sq re-enforced concrete block
F5D6F1-008	F5D6F1	71.14058156	2/9/2011	287488.8759	3841531.828	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	150	Left in Place	None	
F5D6F1-009	F5D6F1	59.41781306	12/14/2010	287477.25	3841539.625	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	25	Scrap Bin	None	Asphalt filled colvert pipe
F5D6F1-010	F5D6F1	54.41898257	1/13/2011	287458.125	3841544.875	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	40	Left in Place	None	
F5D6F1-011	F5D6F1	48.96840666	2/14/2011	287453.8895	3841536.295	Cultural Debris	Scrap	N/A	N/A	N/A	0	30	1200	Left in Place	None	
F5D6F1-012	F5D6F1	36.56719735	12/14/2010	287470.5924	3841540.428	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	5	Scrap Bin	None	4ft fence post
F5D6F1-013	F5D6F1	32.5438621	12/13/2010	287489.7307	3841530.681	SHD	Shared Target	Shared	N/A	N/A	0	24	0	Left in Place	None	Shared with F-8 deeper than 2ft
F5D6F1-014	F5D6F1	31.55678367	1/13/2011	287457.125	3841544	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared with F1-10
F5D6F1-015	F5D6F1	31.42903403	1/13/2011	287457.891	3841549.834	Cultural Debris	Scrap	N/A	N/A	N/A	1	48	21	Left in Place	None	
F5D6F1-016	F5D6F1	31.07489203	12/13/2010	287492	3841547	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	1.5	Scrap Bin	None	Lrg metal lever
F5D6F1-017	F5D6F1	27.66155796	12/13/2010	287475.1117	3841538.333	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	4	Scrap Bin	None	4ft length re-bar
F5D6F1-018	F5D6F1	27.49261778	12/14/2010	287465.4532	3841541.755	MPPEH	Flare	Other (see comments)	Empty	N/A	2	8	3	Scrap Bin	None	Empty hand launchers
F5D6F1-019	F5D6F1	24.61184286	12/13/2010	287482.875	3841535	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	10	Scrap Bin	None	Lrg metal plate
F5D6F1-020	F5D6F1	23.6680009	12/14/2010	287478.8885	3841549.929	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	1	Scrap Bin	None	Lrg U bolt
F5D6F1-021	F5D6F1	22.42591284	12/14/2010	287479.887	3841549.929	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.5	Scrap Bin	None	Metal bracket
F5D6F1-022	F5D6F1	21.68569199	12/13/2010	287478.375	3841541.875	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	1.5	Scrap Bin	None	2ft length re-bar
F5D6F1-023	F5D6F1	19.80163204	12/13/2010	287487.5	3841540.375	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.5	Scrap Bin	None	7ft length barbed fence wire
F5D6F1-024	F5D6F1	17.89880672	12/13/2010	287456.125	3841543.125	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.5	Scrap Bin	None	10 ft re-enforcing wire
F5D6F1-025	F5D6F1	17.81935246	12/13/2010	287481.125	3841548.625	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	3	Scrap Bin	None	Lrg retaining pin
F5D6F1-026	F5D6F1	16.36928624	12/14/2010	287454.375	3841548.5	Cultural Debris	Scrap	N/A	N/A	N/A	2	18	2	Scrap Bin	None	Lrg metal ring and 18" re-bar
F5D6F1-027	F5D6F1	15.63960266	12/13/2010	287486.625	3841541	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared with F1-23
F5D6F1-028	F5D6F1	15.20884596	12/13/2010	287462.8433	3841544.224	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	1.5	Scrap Bin	None	18 inch re-bar
F5D6F1-029	F5D6F1	14.9019528	1/13/2011	287460.375	3841549.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	35	Left in Place	None	
F5D6F1-030	F5D6F1	14.73375383	12/13/2010	287488.1384	3841548.14	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.3	Scrap Bin	None	2 ft barbed fence wire
F5D6F1-031	F5D6F1	14.29001868	12/13/2010	287462.7482	3841535.368	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	15	Scrap Bin	None	Chunk of re-enforced concrete removed.
F5D6F1-032	F5D6F1	13.96926546	12/13/2010	287470.5	3841532	Cultural Debris	Scrap	N/A	N/A	N/A	1	20	5	Scrap Bin	None	3 ft length of square fence post
F5D6F1-033	F5D6F1	13.46929038	12/13/2010	287455.25	3841539.5	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	2	Scrap Bin	None	3 ft heavy wire and re-bar
F5D6F1-034	F5D6F1	13.29262933	12/13/2010	287478.6449	3841543.179	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared with F1-22

Anomaly ID	Grid	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6F1-035	F5D6F1	13.28616482	2/15/2011	287476.875	3841534.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	28	10	Left in Place	None	
F5D6F1-036	F5D6F1	12.44038187	12/13/2010	287485.3093	3841543.939	Cultural Debris	Scrap	N/A	N/A	N/A	1	20	3	Scrap Bin	None	Metal plate
F5D6F1-037	F5D6F1	12.01085542	12/14/2010	287464.6874	3841549.874	Cultural Debris	Scrap	N/A	N/A	N/A	3	3	0.1	Scrap Bin	None	Pieces barbed wire
F5D6F1-038	F5D6F1	11.3296425	12/13/2010	287463.2117	3841542.272	Cultural Debris	Scrap	N/A	N/A	N/A	3	6	0.5	Scrap Bin	None	2-bolts and banding material
F5D6F1-039	F5D6F1	10.36879089	12/14/2010	287456.4905	3841541.909	Cultural Debris	Scrap	N/A	N/A	N/A	2	18	2	Scrap Bin	None	Metal bar and heavy wire
F5D6F1-040	F5D6F1	10.19785607	1/13/2011	287459.25	3841548.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	8	Left in Place	None	
F5D6F1-041	F5D6F1	7.430163628	12/14/2010	287470.3506	3841549.945	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	20	Scrap Bin	None	Chunk re-enf concrete and heavy wire
F5D6F1-042	F5D6F1	7.389234521	12/13/2010	287463.875	3841544.125	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared with F1-28
F5D6F1-043	F5D6F1	7.165741979	12/13/2010	287480.25	3841533.375	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	5	Scrap Bin	None	2 ft square fence post
F5D6F1-044	F5D6F1	7.159077496	12/13/2010	287479.625	3841538.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	3	Scrap Bin	None	1ft long lrg pin
F5D6F1-045	F5D6F1	6.992412689	12/13/2010	287490.4168	3841529.624	SHD	Shared Target	Shared	N/A	N/A	0	24	0	Left in Place	None	Sharedwith F1-8 deeper than 2 ft
F5D6F1-046	F5D6F1	6.98	12/13/2010	287495.4625	3841538.581	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared with F1-49
F5D6F1-047	F5D6F1	6.555986137	12/13/2010	287484.5	3841547.875	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	0.2	Scrap Bin	None	2-pieces of fence wire
F5D6F1-048	F5D6F1	6.091638416	12/13/2010	287476.25	3841532.875	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	0.5	Scrap Bin	None	Snorkle mask and strap with buckles
F5D6F1-049	F5D6F1	5.549222498	12/13/2010	287496.25	3841537.375	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.2	Scrap Bin	None	2 ft heavy wire.
F5D6F1-050	F5D6F1	5.256472439	12/13/2010	287465.625	3841533.75	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	0.1	Scrap Bin	None	2-pieces heavy wire
F5D6F1-051	F5D6F1	5.058149316	12/13/2010	287497.7663	3841549.235	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.1	Scrap Bin	None	2- pieces of heavy fence wire
F5D6F1-052	F5D6F1	4.2875572	12/13/2010	287466.75	3841543.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	4	Scrap Bin	None	Shovel head
F5D6F1-053	F5D6F1	3.66449523	12/13/2010	287478.75	3841531.25	Cultural Debris	Scrap	N/A	N/A	N/A	8	4	0.5	Scrap Bin	None	Wood and nails
F5D6F1-054	F5D6F1	3.62696009	12/13/2010	287486.375	3841536.375	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	0.1	Scrap Bin	None	1-nail and heavy wire
F5D6F1-055	F5D6F1	3.547887363	12/13/2010	287477.875	3841532.75	Cultural Debris	Scrap	N/A	N/A	N/A	10	4	0.5	Scrap Bin	None	Wood and nails
F5D6F1-056	F5D6F1	3.267558642	12/13/2010	287461.875	3841533.75	Cultural Debris	Scrap	N/A	N/A	N/A	3	3	0.5	Scrap Bin	None	2-heavy wire and 1-lrg pin
F5D6F1-057	F5D6F1	3.250486007	12/13/2010	287483.8634	3841549.925	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Spark plug
F5D6F1-058	F5D6F1	3.152479322	12/13/2010	287492.9685	3841549.958	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	Heavy wire
F5D6F1-059	F5D6F1	3.095482327	12/13/2010	287497.75	3841547.125	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.2	Scrap Bin	None	Barbed fence wire
F5D6F1-060	F5D6F1	3.01086238	12/13/2010	287462.625	3841547	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	1	Scrap Bin	None	Metal shim
F5D6F1-061	F5D6F1	3	12/13/2010	287495	3841548.375	Cultural Debris	Scrap	N/A	N/A	N/A	4	5	0.2	Scrap Bin	None	4-pieces heavy wire
			2/14/2011													Re-inf concrete, pipes, barb wire, ra
F5D6F1-062	F5D6F1	999		287453.4605	3841549.242	Cultural Debris	Scrap	N/A	N/A	N/A	89	48	3500	Scrap Bin	None	or wire, banding, nails, trees, re-if wire, rebar. EXA
			2/14/2011													MAG/DIG
F5D6F1-063	F5D6F1	999		287452.5284	3841534.312	Cultural Debris	Scrap	N/A	N/A	N/A	60	36	2500	Scrap Bin	None	Re-inf concrete, re-inf wire, banding, lrg metal channel x2
F5D6F2-001	F5D6F2	2289.067772	1/5/2011	287494.2	3841581.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	25	Scrap Bin	None	12ft, 4-pipe, multiple rebar. EXA
F5D6F2-002	F5D6F2	1555.085658	12/16/2010	287491.2	3841556.8	RRD	Scrap	N/A	N/A	N/A	4	12	300	Scrap Bin	None	MAG/DIG
F5D6F2-003	F5D6F2	1239.750244	1/4/2011	287491.8	3841558.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Lrg 8ft metal frame BHA
F5D6F2-004	F5D6F2	866.848877	1/7/2011	287477.8	3841575.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	8	Scrap Bin	None	2-marshal matting, 2"x10" pin, 6x10 steel plate BHA
F5D6F2-005	F5D6F2	666.2609251	1/6/2011	287450.4	3841579.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shd w/F2-2
F5D6F2-006	F5D6F2	607.5770261	1/7/2011	287459	3841594.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	75	Scrap Bin	None	Eng stk, re-bar
F5D6F2-007	F5D6F2	579.2979487	1/6/2011	287467.4157	3841564.848	Cultural Debris	Scrap	N/A	N/A	N/A	4	10	15	Scrap Bin	None	Previously dug E2
F5D6F2-008	F5D6F2	512.1101683	1/7/2011	287477.6	3841582.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	1	Scrap Bin	None	Axel shaft , banding
F5D6F2-009	F5D6F2	503.349243	1/5/2011	287499	3841561.2	Cultural Debris	Scrap	N/A	N/A	N/A	10	40	300	Scrap Bin	None	Cast iron pipe, eng stk, alum housing, hook
F5D6F2-010	F5D6F2	492.7235105	1/7/2011	287478.6	3841576.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Alum sheet metal
F5D6F2-011	F5D6F2	448.4880631	1/4/2011	287477.3302	3841574.656	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Scrap Bin	None	4 x marshal mat, 3ft wrech, 4 x re-bar, fe-inf wire. BHA
F5D6F2-012	F5D6F2	440.2317198	1/6/2011	287467.3444	3841574.941	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	25	Scrap Bin	None	Shd w/F2-4
F5D6F2-013	F5D6F2	378.4979973	1/5/2011	287483.3574	3841567.737	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	10	Scrap Bin	None	Previously dug
F5D6F2-014	F5D6F2	360.0791016	1/6/2011	287466.6	3841574	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	2ft cast iron pipe piece
F5D6F2-015	F5D6F2	274.7660522	1/6/2011	287466.8	3841572.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	2	Scrap Bin	None	Lrg scrap metal
F5D6F2-016	F5D6F2	214.886795	1/6/2011	287450.8321	3841557.109	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shd w/ F2-12
F5D6F2-017	F5D6F2	155.3156281	1/4/2011	287487.4	3841559	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	18" pipe
F5D6F2-018	F5D6F2	151.7302856	12/15/2010	287476.8	3841565	RRD	Scrap	N/A	N/A	N/A	1	5	8	Scrap Bin	None	Previously dug
F5D6F2-019	F5D6F2	129.275634	1/5/2011	287499.63	3841559	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F2-18
F5D6F2-020	F5D6F2	124.0344619	1/18/2011	287456.8	3841561.2	Cultural Debris	Scrap	N/A	N/A	N/A	3	36	12	Scrap Bin	None	6 ft eng stake
F5D6F2-021	F5D6F2	118.5214767	1/5/2011	287487.8	3841580.8	Cultural Debris	Scrap	N/A	N/A	N/A	3	8	8	Scrap Bin	None	Shd w/ F2-9
F5D6F2-022	F5D6F2	113.6767196	1/6/2011	287499	3841585.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	6	Scrap Bin	None	Eng stk, 2-pipe, BHA
F5D6F2-023	F5D6F2	101.5947876	1/5/2011	287498.4	3841574.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	6	Scrap Bin	None	2 x metal plates, nail
F5D6F2-024	F5D6F2	98.22763057	1/5/2011	287485.9965	3841579.114	Cultural Debris	Scrap	N/A	N/A	N/A	3	8	10	Scrap Bin	None	5 ft rebar
F5D6F2-025	F5D6F2	78.73563385	1/4/2011	287489.6	3841559	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	3	Scrap Bin	None	Metal fence post
F5D6F2-026	F5D6F2	77.36367796	1/17/2011	287458	3841579.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	10	Scrap Bin	None	Pry bar, track cleet, heavy wire
F5D6F2-027	F5D6F2	74.89086909	1/6/2011	287494.0922	3841589.421	Cultural Debris	Scrap	N/A	N/A	N/A	2	10	3	Scrap Bin	None	Heavy wire
F5D6F2-028	F5D6F2	71.42927788	1/17/2011	287457.7152	3841577.402	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	5	Scrap Bin	None	Lrg metal pan, BHA
F5D6F2-029	F5D6F2	71.2608261	1/6/2011	287455.2544	3841558.357	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	60	Scrap Bin	None	5 ft re-bar , pipe
F5D6F2-030	F5D6F2	68.75102996	1/13/2011	287463	3841560.4	Cultural Debris	Scrap	N/A	N/A	N/A	3	30	275	Scrap Bin	None	Metal bucket, BHA
F5D6F2-031	F5D6F2	63.25505446	1/7/2011	287486	3841584.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	40	Scrap Bin	None	6" cast iron water main
F5D6F2-032	F5D6F2	60.61791611	1/5/2011	287485.5329	3841577.224	Cultural Debris	Scrap	N/A	N/A	N/A	3	6	8	Scrap Bin	None	2x3 ft reinf conc,metal plate,reinf wire. BHA
F5D6F2-033	F5D6F2	60.564682	1/6/2011	287470.0905	3841573.408	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	3	Scrap Bin	None	Re-inf concrete
F5D6F2-034	F5D6F2	60.44738769	1/5/2011	287498.6	3841572.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	5	3	Scrap Bin	None	2 x bar stock, 12" pipe
F5D6F2-035	F5D6F2	59.73563385	1/6/2011	287484.8	3841559	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	12	Scrap Bin	None	Folded metal and spike
F5D6F2-036	F5D6F2	59.40673062	12/15/2010	287469.9122	3841571.874	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	3	Scrap Bin	None	Metal lever, heavy wire
F5D6F2-037	F5D6F2	53.43244549	1/5/2011	287500	3841592.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	30	10	Scrap Bin	None	Metal plate
F5D6F2-038	F5D6F2	50.02762984	1/6/2011	287497.7656	3841587.281	Cultural Debris	Scrap	N/A	N/A	N/A	3	8	3	Scrap Bin	None	6ft re-bar and banding
F5D6F2-039	F5D6F2	48.62895202	1/6/2011	287468.45	3841554.185	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	70	Scrap Bin	None	Lrg alum plate, steel bracket
F5D6F2-040	F5D6F2	47.1284615	1/7/2011	287476.92	3841583	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Re-bar, heavy wire, can
																Re-inf concrete
																Shd w/ F2-8

Anomaly ID	Grid	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6F2-041	F5D6F2	46.31384277	1/5/2011	287481.3602	3841576.76	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	2	Scrap Bin	None	Re-bar
F5D6F2-042	F5D6F2	45.79927788	1/5/2011	287486.42	3841577.75	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	2	Scrap Bin	None	Re-bar heavy wire
F5D6F2-043	F5D6F2	45.19290159	1/6/2011	287470.1262	3841577.973	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	0.4	Scrap Bin	None	Re-bar, re-inf wire
F5D6F2-044	F5D6F2	44.89750288	1/17/2011	287463.8	3841576.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	6	Scrap Bin	None	5 ft pipe BHA
F5D6F2-045	F5D6F2	43.85298918	12/15/2010	287480.6	3841552.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1	Scrap Bin	None	Metal "L" bracket
F5D6F2-046	F5D6F2	43.59390259	1/6/2011	287489.8126	3841587.031	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	1	Scrap Bin	None	Crushed pipe
F5D6F2-047	F5D6F2	43.39725113	1/6/2011	287470.1618	3841576.796	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	6	Scrap Bin	None	6 ft re-bar
F5D6F2-048	F5D6F2	41.85609817	1/7/2011	287462.6755	3841597.662	Cultural Debris	Scrap	N/A	N/A	N/A	3	5	5	Scrap Bin	None	Re-bar, banding, wire
F5D6F2-049	F5D6F2	41.10253141	1/5/2011	287479.1847	3841571.446	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	3	Scrap Bin	None	Heavy wire metal plate
F5D6F2-050	F5D6F2	40.91337202	1/6/2011	287490	3841588.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	2	Scrap Bin	None	Angle iron
F5D6F2-051	F5D6F2	40.7337265	1/5/2011	287496.6	3841556	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	4	Scrap Bin	None	4 ft pipe
F5D6F2-052	F5D6F2	34.16641615	12/15/2010	287478.6498	3841561.246	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	40	Scrap Bin	None	1ft sq re-enf concrete block 4ft N of flag
F5D6F2-053	F5D6F2	33.99531554	1/7/2011	287475.8	3841579.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	0	0.3	Scrap Bin	None	Barb wire, re-inf wire
F5D6F2-054	F5D6F2	33.71824262	1/5/2011	287494	3841568.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	1	Scrap Bin	None	14" re-bar
F5D6F2-055	F5D6F2	32.5842018	1/6/2011	287450.4	3841576.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Prev dug
F5D6F2-056	F5D6F2	32.52603149	1/6/2011	287458.2	3841560.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	1	Scrap Bin	None	Heavy re-inf wire, barb wire
F5D6F2-057	F5D6F2	32.3507309	1/6/2011	287474.2632	3841553.115	DMM	Small Arms Br:Small Arms Brass	(See Commer	(See Commer		16	0	0.5	Consolidation Point	None	16 5.56mm blank
F5D6F2-058	F5D6F2	31.60888829	12/15/2010	287469.42	3841571	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	1-nail
F5D6F2-059	F5D6F2	30.98569107	12/15/2010	287488.4	3841557.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	7	Scrap Bin	None	1- 2"dia pipe and 1-1/2" dia pipe
F5D6F2-060	F5D6F2	29.89927788	1/5/2011	287481.7	3841577.75	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.5	Scrap Bin	None	Heavy re-inf wire
F5D6F2-061	F5D6F2	28.45522308	1/5/2011	287497.4803	3841582.609	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	0.5	Scrap Bin	None	2 x re-inf wire
F5D6F2-062	F5D6F2	28.39651297	1/6/2011	287468	3841562.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-7
F5D6F2-063	F5D6F2	27.86445998	1/5/2011	287479.2	3841573.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shd w/F2-49
F5D6F2-064	F5D6F2	27.76279639	1/5/2011	287499.7271	3841589.492	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	5	Scrap Bin	None	Metal framing
F5D6F2-065	F5D6F2	27.63235283	1/13/2011	287464.42	3841561.496	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-30 BHA
F5D6F2-066	F5D6F2	27.55643844	1/6/2011	287467.2731	3841553.65	Cultural Debris	Scrap	N/A	N/A	N/A	2	22	8	Scrap Bin	None	Steel molding, metal tube
F5D6F2-067	F5D6F2	27.1416416	1/7/2011	287451	3841595.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	3	Scrap Bin	None	Lrg metal sstk, bundle comm wire
F5D6F2-068	F5D6F2	25.98361778	1/5/2011	287499.8	3841570.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.5	Scrap Bin	None	Heavy re-inf wire
F5D6F2-069	F5D6F2	25.27487946	12/15/2010	287479.5414	3841550.083	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.5	Scrap Bin	None	Metal universal cap
F5D6F2-070	F5D6F2	25.26392364	1/6/2011	287474.8	3841552.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Prev Dug
F5D6F2-071	F5D6F2	24.64888	1/4/2011	287487.1021	3841571.089	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6F2-072	F5D6F2	24.64888	1/4/2011	287483.4287	3841563.065	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6F2-073	F5D6F2	23.61875724	1/4/2011	287494.8	3841552.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	2	Scrap Bin	None	2 ft re-bar
F5D6F2-074	F5D6F2	23.52010727	1/7/2011	287478.7211	3841577.545	MPPEH	Small Arms Br:Small Arms Brass	Empty	N/A	N/A	2	6	0.1	Scrap Bin	None	5.56mm blanks
F5D6F2-075	F5D6F2	23.23275756	1/18/2011	287452.6152	3841560.854	Cultural Debris	Scrap	N/A	N/A	N/A	4	30	25	Scrap Bin	None	Eng stk, re-inf concrete, 2-heavy re-inf wire, BHA
F5D6F2-076	F5D6F2	23.18663977	1/6/2011	287490.2	3841589.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	15	Scrap Bin	None	Re-inf concrete
F5D6F2-077	F5D6F2	23.00590706	1/6/2011	287467.6654	3841561.781	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6F2-078	F5D6F2	22.59026527	12/15/2010	287487.2091	3841555.112	DMM	Small Arms Br:Small Arms Brass	(See Commer	(See Commer		20	0	0.5	Consolidation Point	Demil	20- DMM 5.56mm un-fired blanks
F5D6F2-079	F5D6F2	22.03809737	1/5/2011	287497.4803	3841563.029	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-9 BHA
F5D6F2-080	F5D6F2	21.68298911	1/5/2011	287497	3841558.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	8	Scrap Bin	None	Lrg metal plate
F5D6F2-081	F5D6F2	21.02782822	1/17/2011	287460.2	3841580	MPPEH	Flare	M127A1, Star Parachute	Empty	er (See Commer	1	4	1	Consolidation Point	None	Expended ground signal flare
F5D6F2-082	F5D6F2	20.9246597	1/6/2011	287450.8	3841586.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Prev Dug E2
F5D6F2-083	F5D6F2	20.60721811	12/15/2010	287480	3841553	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	1.5	Scrap Bin	None	2ft re-bar
F5D6F2-084	F5D6F2	20.28505274	1/6/2011	287497.88	3841586	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-22
F5D6F2-085	F5D6F2	20.26251655	1/6/2011	287493.46	3841590.5	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F2-27
F5D6F2-086	F5D6F2	19.58591652	1/6/2011	287464.8	3841550	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.3	Scrap Bin	None	Heavy re-inf wire
F5D6F2-087	F5D6F2	19.35765209	1/17/2011	287450.37	3841580.75	Cultural Debris	Scrap	N/A	N/A	N/A	7	36	5	Scrap Bin	None	4-rebar, 1-eng stk, 2-pipe BHA
F5D6F2-088	F5D6F2	18.95511818	1/5/2011	287489.4	3841566.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	3	Scrap Bin	None	3 ft re-bar , wing nut
F5D6F2-089	F5D6F2	18.86944198	1/6/2011	287496.6243	3841585.64	MPPEH	Small Arms Br:Small Arms Brass	Empty	N/A	N/A	2	6	0.1	Consolidation	None	2- 5.56 blank exp
F5D6F2-090	F5D6F2	18.56947558	1/6/2011	287469.06	3841578.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.1	Scrap Bin	None	Re-bar
F5D6F2-091	F5D6F2	18.45223235	1/5/2011	287496.6	3841577.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	Hack saw blade
F5D6F2-092	F5D6F2	18.39711761	1/7/2011	287485.0693	3841586.354	Cultural Debris	Scrap	N/A	N/A	N/A	5	48	4	Scrap Bin	None	Sheet metal, wire, pipes BHA
F5D6F2-093	F5D6F2	18.19810294	1/7/2011	287476.3316	3841580.576	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	4	Scrap Bin	None	Metal coupler
F5D6F2-094	F5D6F2	18.05251655	1/5/2011	287499.62	3841590.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	2	Scrap Bin	None	Metal plate
F5D6F2-095	F5D6F2	17.71818924	1/5/2011	287487.8	3841578.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	6	Scrap Bin	None	Lrg metal chunk, re-inf wire
F5D6F2-096	F5D6F2	17.53268814	1/7/2011	287484.4	3841585.4	Cultural Debris	Scrap	N/A	N/A	N/A	4	24	3	Scrap Bin	None	Bracket, heavy wire , pipe, sheet metal, BHA
F5D6F2-097	F5D6F2	17.51884832	1/17/2011	287456.92	3841576.25	Cultural Debris	Scrap	N/A	N/A	N/A	3	30	50	Scrap Bin	None	2- re-inf conc, heavy banding, BHA
F5D6F2-098	F5D6F2	17.3778286	1/17/2011	287452.8	3841580	Cultural Debris	Scrap	N/A	N/A	N/A	3	30	5	Scrap Bin	None	Re-inf wire, spike, cast pipe BHA
F5D6F2-099	F5D6F2	17.36091804	1/4/2011	287485	3841560.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	30	Scrap Bin	None	Stake and wire reel
F5D6F2-100	F5D6F2	17.15734862	1/7/2011	287461.2765	3841593.977	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	2	Scrap Bin	None	Re-bar
F5D6F2-101	F5D6F2	17.12359999	1/6/2011	287471.8	3841553.8	MPPEH	Small Arms Br:Small Arms Brass	Empty	N/A	N/A	2	0	0.1	Consolidation	None	5.56mm blank exp
F5D6F2-102	F5D6F2	17.02182388	1/4/2011	287487.6	3841570.2	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6F2-103	F5D6F2	16.70866365	12/15/2010	287479.81	3841551.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	2	Scrap Bin	None	18" re-bar
F5D6F2-104	F5D6F2	16.68039703	1/5/2011	287493.4	3841576.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	2	Scrap Bin	None	Metal pipe
F5D6F2-105	F5D6F2	16.51960406	1/7/2011	287452.65	3841559.75	Cultural Debris	Scrap	N/A	N/A	N/A	2	5	0.2	Scrap Bin	None	Hesvy re-inf wire, spike
F5D6F2-106	F5D6F2	16.42451476	1/6/2011	287454	3841580.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	6	Scrap Bin	None	6 ft re-bar
F5D6F2-107	F5D6F2	16.27947558	1/17/2011	287453.6852	3841578.472	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	5	Scrap Bin	None	6"x12" metal plate, BHA
F5D6F2-108	F5D6F2	16.27667618	1/17/2011	287464.2	3841574.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-44 BHA
F5D6F2-109	F5D6F2	16.26899909	12/15/2010	287475	3841562.8	Cultural Debris	Scrap	N/A	N/A	N/A	3	4	0.3	Scrap Bin	None	Nail, tent stake and wire
F5D6F2-110	F5D6F2	15.94757246	1/4/2011	287479.06	3841570.25	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Scrap Bin	None	Previously dug
F5D6F2-111	F5D6F2	15.86090373	1/5/2011	287489	3841576.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	5	Scrap Bin	None	Cast iron plate, re-inf wire
F5D6F2-112	F5D6F2	15.85123158	1/5/2011	287499.2	3841571	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-68

Anomaly ID	Grid	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6F2-113	F5D6F2	15.54722309	1/6/2011	287497	3841584.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	1	Scrap Bin	None	Metal tube
F5D6F2-114	F5D6F2	15.40569264	1/4/2011	287486.42	3841558.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	3	Scrap Bin	None	4 ft carriage bolt
F5D6F2-115	F5D6F2	15.2859249	1/5/2011	287487.4	3841573.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.5	Scrap Bin	None	Pipe
F5D6F2-116	F5D6F2	15.12769206	1/13/2011	287464.5983	3841569.128	MPPEH	Small Arms Br:Small Arms Brass		Empty	N/A	2	30	0.1	Consolidation Point	None	2- 5.56m blank exp BHA
F5D6F2-117	F5D6F2	15.07643222	1/5/2011	287496	3841558.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F2-80
F5D6F2-118	F5D6F2	14.98092079	1/5/2011	287482	3841579.2	Cultural Debris	Scrap	N/A	N/A	N/A	3	18	2	Scrap Bin	None	2x large rings and heavy wire
F5D6F2-119	F5D6F2	14.86912727	1/5/2011	287488.4573	3841577.545	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-95
F5D6F2-120	F5D6F2	14.8608179	1/5/2011	287496.6	3841559.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.3	Scrap Bin	None	Hea y re-inf wire
F5D6F2-121	F5D6F2	14.50938277	1/7/2011	287451.67	3841596.5	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-67
F5D6F2-122	F5D6F2	13.79659843	1/7/2011	287480.4686	3841577.331	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.5	Scrap Bin	None	Metal screen
F5D6F2-123	F5D6F2	13.74592759	12/15/2010	287476.6	3841566.5	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared with F2-18
F5D6F2-124	F5D6F2	13.61173629	1/7/2011	287479	3841583.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	4	Scrap Bin	None	3ft re-bar
F5D6F2-125	F5D6F2	13.431674	1/5/2011	287494.2705	3841575.761	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F2-104
F5D6F2-126	F5D6F2	12.81339073	1/7/2011	287476.7827	3841585.568	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.2	Scrap Bin	None	Re-inf wire
F5D6F2-127	F5D6F2	12.78857517	1/6/2011	287477.4	3841572.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Wire
F5D6F2-128	F5D6F2	12.59201049	1/4/2011	287494	3841564.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.2	Scrap Bin	None	Barb wire
F5D6F2-129	F5D6F2	12.43777275	1/7/2011	287479.6127	3841581.824	Cultural Debris	Scrap	N/A	N/A	N/A	3	10	10	Scrap Bin	None	Lrg metal cleet , 2-bar stock
F5D6F2-130	F5D6F2	12.4093008	1/5/2011	287482.6	3841581.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	6	Scrap Bin	None	Lrg metal bracket BHA
F5D6F2-131	F5D6F2	12.16336059	12/15/2010	287472.4086	3841567.63	RRD	Scrap	N/A	N/A	N/A	1	6	0.2	Scrap Bin	None	Razor wire
F5D6F2-132	F5D6F2	12.12661361	1/6/2011	287490.0622	3841583.536	Cultural Debris	Scrap	N/A	N/A	N/A	4	7	0.5	Scrap Bin	None	Paddle lock, 3-nails
F5D6F2-133	F5D6F2	12.01985703	1/6/2011	287450.75	3841555.25	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Prev Dug
F5D6F2-134	F5D6F2	11.62360287	1/7/2011	287477.9009	3841584.642	Cultural Debris	Scrap	N/A	N/A	N/A	2	10	1	Scrap Bin	None	Banding, heavy wire
F5D6F2-135	F5D6F2	11.558424	1/18/2011	287455	3841562	Cultural Debris	Scrap	N/A	N/A	N/A	5	36	2000	Scrap Bin	None	2-re-inf concrete, 3- heavy re-inf wire, BHA
F5D6F2-136	F5D6F2	11.43645573	1/5/2011	287496.1964	3841554.648	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w// F2-51
F5D6F2-137	F5D6F2	11.40947558	1/17/2011	287454.91	3841578.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	2	Scrap Bin	None	Rebar, BHA
F5D6F2-138	F5D6F2	11.34474087	1/4/2011	287496.232	3841552.723	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-140
F5D6F2-139	F5D6F2	11.33647537	1/6/2011	287450.4	3841582.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Prev Dug E-2
F5D6F2-140	F5D6F2	11.25679779	1/4/2011	287495.8	3841553.8	Cultural Debris	Scrap	N/A	N/A	N/A	3	1	2	Scrap Bin	None	Angle iron and 2 lrg nails
F5D6F2-141	F5D6F2	11.24480731	1/6/2011	287490.94	3841587.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	8	Scrap Bin	None	Pental hook latch
F5D6F2-142	F5D6F2	11.18844413	1/5/2011	287486	3841582.2	Cultural Debris	Scrap	N/A	N/A	N/A	3	10	2	Scrap Bin	None	Re-bar, banding, nail
F5D6F2-143	F5D6F2	11.0383957	1/6/2011	287471.11	3841554.5	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-101
F5D6F2-144	F5D6F2	10.98461914	1/7/2011	287480	3841578.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	0.3	Scrap Bin	None	Heavy re-inf wire, conector
F5D6F2-145	F5D6F2	10.9839716	1/5/2011	287485.4	3841563.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.25	Scrap Bin	None	12" heavy wire
F5D6F2-146	F5D6F2	10.93332958	1/6/2011	287464.4	3841552.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.5	Scrap Bin	None	Barb wire bundle
F5D6F2-147	F5D6F2	10.91399765	1/13/2011	287466.6	3841568.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F2-116 BHA
F5D6F2-148	F5D6F2	10.75135039	1/6/2011	287488	3841586.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	24	15	Scrap Bin	None	30" pipe , scrap
F5D6F2-149	F5D6F2	10.688097	1/7/2011	287463.4	3841563.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	0.5	Scrap Bin	None	Door knob , alum can
F5D6F2-150	F5D6F2	10.59127998	1/6/2011	287469	3841556	Cultural Debris	Scrap	N/A	N/A	N/A	3	18	6	Scrap Bin	None	Metal tube, wire, metal molding
F5D6F2-151	F5D6F2	10.33183384	1/5/2011	287488.279	3841564.492	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.5	Scrap Bin	None	30" heavy wire
F5D6F2-152	F5D6F2	10.32955441	1/7/2011	287459.22	3841595.75	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.5	Scrap Bin	None	Lrg bolt
F5D6F2-153	F5D6F2	10.32815594	1/6/2011	287496.79	3841588.25	Cultural Debris	Scrap	N/A	N/A	N/A	2	N/A	6	Scrap Bin	None	Metal bracket, plate
F5D6F2-154	F5D6F2	10.27480731	2/16/2011	287485.07	3841587.5	Cultural Debris	Scrap	N/A	N/A	N/A	3	18	1	Scrap Bin	None	Conduit, heavy wire, battery BHA
F5D6F2-155	F5D6F2	10.21688747	1/17/2011	287455.3614	3841577.545	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	8	Scrap Bin	None	Lrg penal, BHA
F5D6F2-156	F5D6F2	10.09927248	1/6/2011	287468.85	3841563.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	1	Scrap Bin	None	Metal plate
F5D6F2-157	F5D6F2	10.06665707	1/7/2011	287473.5142	3841579.898	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.3	Scrap Bin	None	Heavy re-inf wire
F5D6F2-158	F5D6F2	9.878754616	1/5/2011	287493.2006	3841567.737	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.5	Scrap Bin	None	Pipe
F5D6F2-159	F5D6F2	9.712801931	12/15/2010	287473.8708	3841565.597	RRD	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Comm wire
F5D6F2-160	F5D6F2	9.668395699	1/6/2011	287450	3841554.5	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Prev Dug
F5D6F2-161	F5D6F2	9.387106542	1/17/2011	287465.1	3841575.5	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-44 BHA
F5D6F2-162	F5D6F2	9.367652091	1/17/2011	287458.89	3841580.75	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	2	Scrap Bin	None	Metal framing, BHA
F5D6F2-163	F5D6F2	8.928971195	1/5/2011	287498.27	3841576.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	N/A	0.5	Scrap Bin	None	Metal bracket
F5D6F2-164	F5D6F2	8.913117407	1/4/2011	287496.6	3841553.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-140
F5D6F2-165	F5D6F2	8.873880385	12/15/2010	287473.9778	3841566.596	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	0.2	Scrap Bin	None	2- pieces heavy wire
F5D6F2-166	F5D6F2	8.799857031	1/5/2011	287497.5	3841555.25	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-51
F5D6F2-167	F5D6F2	8.778795238	1/5/2011	287489.8	3841576.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.2	Scrap Bin	None	Re-inf wire
F5D6F2-168	F5D6F2	8.59216594	1/5/2011	287484.2	3841580.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	2	Scrap Bin	None	Re-bar, metal molding BHA
F5D6F2-169	F5D6F2	8.449407279	12/15/2010	287486.73	3841556	RRD	Scrap	N/A	N/A	N/A	1	1	0.1	Scrap Bin	None	Comm wire
F5D6F2-170	F5D6F2	8.447769162	1/7/2011	287480.2	3841585.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	Heavy wire
F5D6F2-171	F5D6F2	8.189857031	1/5/2011	287493.3076	3841554.934	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.1	Scrap Bin	None	Alum bracket, ball bearing
F5D6F2-172	F5D6F2	8.165130615	1/7/2011	287464.6	3841599.6	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F2-208 BHA
F5D6F2-173	F5D6F2	8.079485948	1/7/2011	287462.86	3841598.75	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Wire
F5D6F2-174	F5D6F2	7.955528256	1/7/2011	287459.2	3841576.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	20	200	Scrap Bin	None	Re-inf concrete BHA
F5D6F2-175	F5D6F2	7.85017252	1/4/2011	287491.1678	3841570.626	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6F2-176	F5D6F2	7.752779478	1/5/2011	287491.6	3841571.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.1	Scrap Bin	None	2" bolt
F5D6F2-177	F5D6F2	7.721359248	1/5/2011	287493.8	3841553.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1	Scrap Bin	None	Re-inf wire
F5D6F2-178	F5D6F2	7.649627684	1/5/2011	287481.3246	3841570.412	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	1	Scrap Bin	None	Scrap metal
F5D6F2-179	F5D6F2	7.517382622	1/7/2011	287474.6	3841583	Cultural Debris	Scrap	N/A	N/A	N/A	2	10	0.2	Scrap Bin	None	Heavy wire, nail
F5D6F2-180	F5D6F2	7.472893238	1/6/2011	287463.4	3841577.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	2	Scrap Bin	None	Metal conduit
F5D6F2-181	F5D6F2	7.292808532	12/15/2010	287471.6	3841569.4	Cultural Debris	Scrap	N/A	N/A	N/A	3	16	5	Scrap Bin	None	Re-inf concrete and 2-wire
F5D6F2-182	F5D6F2	7.212544441	1/7/2011	287481.0763	3841586.373	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	8	Scrap Bin	None	Lrg metal pin
F5D6F2-183	F5D6F2	7.194501637	1/7/2011	287475.85	3841581.5	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-93
F5D6F2-184	F5D6F2	7.08982319	1/6/2011	287498.52	3841583.75	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Re-inf wire

Anomaly ID	Grid	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6F2-185	F5D6F2	6.978423667	1/13/2011	287462.94	3841562	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-30 BHA
F5D6F2-186	F5D6F2	6.782894133	1/6/2011	287487.6014	3841584.071	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.5	Scrap Bin	None	2 x4 metal
F5D6F2-187	F5D6F2	6.717106542	1/5/2011	287499.61	3841575.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.3	Scrap Bin	None	Re-inf wire
F5D6F2-188	F5D6F2	6.652382374	1/6/2011	287470.4	3841550	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Prev Dug
F5D6F2-189	F5D6F2	6.498135563	1/4/2011	287495.8754	3841550.511	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.1	Scrap Bin	None	2 x heavy wire
F5D6F2-190	F5D6F2	6.486343384	1/6/2011	287472.4	3841559	MPPEH	Small Arms Br:Small Arms Brass		Empty	N/A	2	8	0.1	Consolidation Point	None	2-5.56 mm blank exp
F5D6F2-191	F5D6F2	6.277171113	1/17/2011	287452	3841580.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.5	Scrap Bin	None	Re-inf wire BHA
F5D6F2-192	F5D6F2	5.858793731	1/5/2011	287491.5601	3841577.58	DMM	Small Arms Br:Small Arms Brass	(See Commner (See Commer			20	0	0.5	Consolidation Point	None	20-5.56mm blank un-fired
F5D6F2-193	F5D6F2	5.775927589	1/6/2011	287467.36	3841566.5	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-7
F5D6F2-194	F5D6F2	5.719232082	1/5/2011	287497.4446	3841564.884	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F2-9 BHA
F5D6F2-195	F5D6F2	5.708326339	1/5/2011	287496	3841576.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	1	Scrap Bin	None	Angle bracket
F5D6F2-196	F5D6F2	5.687652091	1/6/2011	287480.18	3841580.75	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6F2-197	F5D6F2	5.61719942	1/6/2011	287489	3841584.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	24	2	Scrap Bin	None	Nail, scrap metal
F5D6F2-198	F5D6F2	5.57126379	1/4/2011	287489.6	3841564.2	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6F2-199	F5D6F2	5.539441775	1/6/2011	287489.27	3841589	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F2-76
F5D6F2-200	F5D6F2	5.527218109	1/6/2011	287464.04	3841553	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F2-146
F5D6F2-201	F5D6F2	5.443793772	12/15/2010	287479.6	3841558.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.2	Scrap Bin	None	Heavy wire
F5D6F2-202	F5D6F2	5.368395699	1/5/2011	287490.37	3841554.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	16	1	Scrap Bin	None	Metal pipe
F5D6F2-203	F5D6F2	5.364210604	1/6/2011	287450	3841587.4	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Prev Dug
F5D6F2-204	F5D6F2	5.111326693	1/7/2011	287465.6	3841570.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.1	Scrap Bin	None	Pull tab , wire
F5D6F2-205	F5D6F2	4.998822281	1/6/2011	287464.72	3841562.75	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	1	Scrap Bin	None	Re-bar, wire
F5D6F2-206	F5D6F2	4.955052744	1/6/2011	287490.58	3841586	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	Wire
F5D6F2-207	F5D6F2	4.895634174	1/5/2011	287495.2	3841559	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	2	Scrap Bin	None	Re-bar
F5D6F2-208	F5D6F2	4.879766463	1/7/2011	287465.4	3841598.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	24	8	Scrap Bin	None	Cable piece, wire, BHA
F5D6F2-209	F5D6F2	4.811391353	1/4/2011	287498.8	3841568	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6F2-210	F5D6F2	4.747462747	1/7/2011	287481.926	3841587.089	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-182
F5D6F2-211	F5D6F2	4.69743061	1/6/2011	287480.5756	3841569.271	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Prev Dug
F5D6F2-212	F5D6F2	4.634713172	1/7/2011	287450.4	3841550.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.1	Scrap Bin	None	Comm wire
F5D6F2-213	F5D6F2	4.589086076	1/7/2011	287463.59	3841592.75	Cultural Debris	Scrap	N/A	N/A	N/A	6	30	200	Scrap Bin	None	50ft cable, 2-reinf conc, nail, heavy wire, sheet metal. BHA
F5D6F2-214	F5D6F2	4.482367035	1/4/2011	287498.2	3841568.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Nail
F5D6F2-215	F5D6F2	4.419475575	1/7/2011	287478.49	3841578.5	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	0.5	Scrap Bin	None	Bracket, wire
F5D6F2-216	F5D6F2	4.332967755	1/6/2011	287472.8	3841571.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.5	Scrap Bin	None	Re-inf wire
F5D6F2-217	F5D6F2	4.329140184	1/5/2011	287490.4	3841570.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.4	Scrap Bin	None	12" banding material
F5D6F2-218	F5D6F2	4.26960406	1/6/2011	287454.9	3841559.75	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-29
F5D6F2-219	F5D6F2	4.240327835	1/6/2011	287499.6	3841583	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.1	Scrap Bin	None	Re-inf wire
F5D6F2-220	F5D6F2	4.228848322	1/6/2011	287467.12	3841576.25	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F2-12
F5D6F2-221	F5D6F2	4.219031702	1/5/2011	287490.89	3841553.75	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Re-inf wire
F5D6F2-222	F5D6F2	4.197106542	1/5/2011	287490.78	3841575.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.3	Scrap Bin	None	Re-inf wire
F5D6F2-223	F5D6F2	4.130744457	1/5/2011	287489.2	3841574	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.1	Scrap Bin	None	2 x banding
F5D6F2-224	F5D6F2	4.113911628	1/5/2011	287484.2	3841572.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	Lrg nail
F5D6F2-225	F5D6F2	4.091434955	1/5/2011	287485.3189	3841575.155	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	0.5	Scrap Bin	None	Metal bracket , wire
F5D6F2-226	F5D6F2	4.06846714	1/5/2011	287489.2	3841572.4	Cultural Debris	Scrap	N/A	N/A	N/A	4	6	0.1	Scrap Bin	None	Alum foil trash
F5D6F2-227	F5D6F2	4.035191059	1/5/2011	287498.6	3841589	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.5	Scrap Bin	None	Heavy wire
F5D6F2-228	F5D6F2	3.889272481	1/5/2011	287499.63	3841563.5	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-9 BHA
F5D6F2-229	F5D6F2	3.880771159	12/15/2010	287475.9037	3841561.603	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6F2-230	F5D6F2	3.827970781	1/6/2011	287466.67	3841567.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Wire
F5D6F2-231	F5D6F2	3.827311992	1/6/2011	287487.958	3841585.605	Cultural Debris	Scrap	N/A	N/A	N/A	3	5	0.3	Scrap Bin	None	3- lrg nails
F5D6F2-232	F5D6F2	3.804052828	1/5/2011	287491.2	3841573.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Heavy re-inf wire
F5D6F2-233	F5D6F2	3.762283563	1/5/2011	287495.6	3841566.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.1	Scrap Bin	None	Small wire
F5D6F2-234	F5D6F2	3.749909877	1/6/2011	287469.8	3841561.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.1	Scrap Bin	None	Wire
F5D6F2-235	F5D6F2	3.745460987	1/7/2011	287476.8	3841577.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.2	Scrap Bin	None	Re-inf wire
F5D6F2-236	F5D6F2	3.70701766	2/16/2011	287492.8	3841598.6	Cultural Debris	Scrap	N/A	N/A	N/A	10	24	1200	Scrap Bin	None	4-rebar, 2-conduit, 4-concrete BHA
F5D6F2-237	F5D6F2	3.660634756	1/4/2011	287492.8	3841565	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	Heavy wire
F5D6F2-238	F5D6F2	3.607929358	1/5/2011	287495.56	3841592	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.2	Scrap Bin	None	Heavy wire
F5D6F2-239	F5D6F2	3.567652091	1/5/2011	287485.27	3841580.75	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	3	Scrap Bin	None	Concrete and re-bar
F5D6F2-240	F5D6F2	3.519342661	1/4/2011	287493.2	3841550	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Scrap Bin	None	Previously dug
F5D6F2-241	F5D6F2	3.489485502	1/13/2011	287464.6	3841571	Cultural Debris	Scrap	N/A	N/A	N/A	3	30	17	Scrap Bin	None	2ft bar, reinf conc, sheet metal BHA
F5D6F2-242	F5D6F2	3.485927589	12/15/2010	287471.89	3841566.5	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6F2-243	F5D6F2	3.453079701	1/5/2011	287484.2	3841574	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.2	Scrap Bin	None	Heavy wire
F5D6F2-244	F5D6F2	3.429112911	1/6/2011	287473.6	3841574	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Re-inf wire
F5D6F2-245	F5D6F2	3.414842127	1/7/2011	287474.6911	3841577.473	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	10	Scrap Bin	None	Barb wire, re-inf concrete
F5D6F2-246	F5D6F2	3.367840528	12/15/2010	287484.2	3841550	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	0.1	Scrap Bin	None	Heavy wire
F5D6F2-247	F5D6F2	3.359027147	1/17/2011	287452	3841553.8	Cultural Debris	Scrap	N/A	N/A	N/A	11	36	10	Scrap Bin	None	4-rebar, 6- pipe, re-inf wire BHA
F5D6F2-248	F5D6F2	3.356723308	1/5/2011	287485	3841576	Cultural Debris	Scrap	N/A	N/A	N/A	2	10	0.5	Scrap Bin	None	Wire, banding
F5D6F2-249	F5D6F2	3.341821909	1/6/2011	287469.4	3841565	Cultural Debris	Scrap	N/A	N/A	N/A	2	18	12	Scrap Bin	None	Re-inf , conduit
F5D6F2-250	F5D6F2	3.335798263	1/6/2011	287464.6	3841567.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.3	Scrap Bin	None	Banding
F5D6F2-251	F5D6F2	3.329556631	1/4/2011	287484.62	3841557.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	Heavy wire
F5D6F2-252	F5D6F2	3.320195913	1/6/2011	287492.6	3841584.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.3	Scrap Bin	None	Spike
F5D6F2-253	F5D6F2	3.257106542	1/5/2011	287480.36	3841575.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.2	Scrap Bin	None	Lrg banding
F5D6F2-254	F5D6F2	3.248901366	1/6/2011	287468	3841558.2	DMM	Small Arms Br:Small Arms Brass	(See Commner (See Commer			1	2	0.1	Consolidation Point	None	5.56mm blank
F5D6F2-255	F5D6F2	3.220248221	12/15/2010	287472.6	3841565.8	Cultural Debris	Scrap	N/A	N/A	N/A	3	3	0.1	Scrap Bin	None	2-nails and wire

Anomaly ID	Grid	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6F2-256	F5D6F2	3.216241121	12/15/2010	287474.3345	3841569.128	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	2.5	Scrap Bin	None	Plow blade
F5D6F2-257	F5D6F2	3.214270167	1/6/2011	287450.38	3841583.75	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Prev Dug E2
F5D6F2-258	F5D6F2	3.159681897	12/15/2010	287487.09	3841560.5	Cultural Debris	Scrap	N/A	N/A	N/A	3	8	45	Scrap Bin	None	8ft metal support, 2-1ft pieces of 1" dia pipe
F5D6F2-259	F5D6F2	3.127788791	1/6/2011	287475.52	3841572.5	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6F2-260	F5D6F2	3.120222567	1/6/2011	287472.6	3841573.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	2	Scrap Bin	None	Re-bar
F5D6F2-261	F5D6F2	3.102735517	1/6/2011	287473.4	3841550.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Prev Dug
F5D6F2-262	F5D6F2	3.088087017	1/7/2011	287452.8	3841595	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-67
F5D6F2-263	F5D6F2	3.087827688	1/7/2011	287463.46	3841580	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	1	Scrap Bin	None	Bar stock.
F5D6F2-264	F5D6F2	3.075896221	1/7/2011	287457.96	3841584.5	Cultural Debris	Scrap	N/A	N/A	N/A	7	48	10	Scrap Bin	None	4-pipe, banding , aerosol can, banding BHA
F5D6F2-265	F5D6F2	3.069244152	1/5/2011	287498.73	3841564.25	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F2-9, BHA
F5D6F2-266	F5D6F2	3.059983296	1/6/2011	287467.78	3841569.5	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6F2-267	F5D6F2	3.059884071	1/4/2011	287500	3841552.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	Metal lever
F5D6F2-268	F5D6F2	3.058663646	1/6/2011	287462.83	3841551.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.3	Scrap Bin	None	Re-inf wire
F5D6F2-269	F5D6F2	3.047788791	1/6/2011	287473.43	3841572.5	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6F2-270	F5D6F2	3.017929358	1/7/2011	287465.25	3841592	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F2-213 BHA
F5D6F2-271	F5D6F2	3.001984615	1/5/2011	287495.09	3841583	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F2-1
																10 cyds reinf concrete,cast pipe,razor/barb wire,marshal
F5D6F2-272	F5D6F2		3/22/2011	287450	3841575.205	Cultural Debris	Scrap	N/A	N/A	N/A	1500	36	42000	Scrap Bin	None	matting,pipe,fire hydrant,reinf wire wood. ASA F2-01
																MAG/DIG POLY start 0930 031611, comp 0930 032211.
F5D6F2-273	F5D6F2		6/2/2011	287466.4177	3841600	MPPEH	Misc	Other (see comments)	nert Material	N/A	45	48	45	Consolidation Point	None	ASA F2-02 start 1230/050511, Comp 1430/060211,
																MAG/DIG 30-lifting lugs, 10-rotating band covers, 5-
																ship/safe forks.
F5D6F2-274	F5D6F2		2/15/2011	287453.3352	3841550	Cultural Debris	Scrap	N/A	N/A	N/A	635	24	8660	Scrap Bin	None	35- reinf conc, metal pipe, rebar, conduit, reinf wire, steel
F5D6F3-001	F5D6F3	3142.228501	2/2/2011	287462.1954	3841609.378	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	60	Scrap Bin	None	gurder framing, plastic sheeting. BHA MAG/DIG POLY.
F5D6F3-002	F5D6F3	2955.926513	2/2/2011	287462.6	3841608.4	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Completed on 01/17/2011.
F5D6F3-003	F5D6F3	2273.461201	2/1/2011	287486	3841646.4	RRD	Scrap	N/A	N/A	N/A	12	1	15	Consolidation Point	None	12 ft metal culvert band
F5D6F3-004	F5D6F3	432.8456759	2/2/2011	287462.2617	3841607.522	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F3-01
F5D6F3-005	F5D6F3	426.3677412	2/1/2011	287485.5884	3841644.981	RRD	Scrap	N/A	N/A	N/A	4	6	4	Consolidation Point	None	Shd w/F3-01
F5D6F3-006	F5D6F3	396.2148069	12/10/2010	287472.2395	3841639.279	RRD	Scrap	N/A	N/A	N/A	1	2	0.2	Scrap Bin	None	Ammo can lid, 3-rotating band covers
F5D6F3-007	F5D6F3	239.2742434	2/1/2011	287486.2447	3841644.081	RRD	Scrap	N/A	N/A	N/A	1	12	4	Consolidation Point	None	Alum tent stake
F5D6F3-008	F5D6F3	205.3706763	2/1/2011	287491.1529	3841640.281	Cultural Debris	Scrap	N/A	N/A	N/A	6	4	4	Scrap Bin	None	Ammo can
F5D6F3-009	F5D6F3	131.099945	2/2/2011	287462.2	3841603	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	12	Scrap Bin	None	3-nails, spring , 2-pipe
F5D6F3-010	F5D6F3	93.3852844	2/2/2011	287477.6	3841622	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	5	Scrap Bin	None	Lrg wheel hub
F5D6F3-011	F5D6F3	89.45268381	2/2/2011	287482.8196	3841627.626	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	2	Scrap Bin	None	Lrg rebar
F5D6F3-012	F5D6F3	77.06752004	2/1/2011	287493.1068	3841642.028	Cultural Debris	Scrap	N/A	N/A	N/A	2	5	15	Scrap Bin	None	Rebar
F5D6F3-013	F5D6F3	65.8622249	2/8/2011	287474.4146	3841642.945	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	25	Left in Place	None	Lrg metal bracket, cast pipe
F5D6F3-014	F5D6F3	65.74080655	2/2/2011	287492.6	3841606.8	Cultural Debris	Scrap	N/A	N/A	N/A	4	24	2	Scrap Bin	None	
F5D6F3-015	F5D6F3	59.98890684	12/9/2010	287450.2	3841619	RRD	Scrap	N/A	N/A	N/A	1	3	0.3	Scrap Bin	None	Lrg rebar, 3-bolts BHA
F5D6F3-016	F5D6F3	56.52798077	2/1/2011	287494.6	3841637.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	2	Scrap Bin	None	Bandinng material
F5D6F3-017	F5D6F3	53.94833754	2/2/2011	287475.2	3841619.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	14	2	Scrap Bin	None	Cast pipe
F5D6F3-018	F5D6F3	53.59630972	2/2/2011	287461.507	3841610.64	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Rebar
F5D6F3-019	F5D6F3	53.22228778	2/2/2011	287491.1394	3841632.681	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	8	Scrap Bin	None	Shd w/F3-01
F5D6F3-020	F5D6F3	53.10464477	2/15/2011	287469.2	3841635.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	28	40	Left in Place	None	Lrg metal plate
F5D6F3-021	F5D6F3	52.70273589	2/2/2011	287478.8	3841622	Cultural Debris	Scrap	N/A	N/A	N/A	3	8	6	Scrap Bin	None	
F5D6F3-022	F5D6F3	52.49669535	2/2/2011	287478.114	3841621.28	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Rebar
F5D6F3-023	F5D6F3	50.84549033	2/2/2011	287473.3014	3841619.584	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	4	Scrap Bin	None	Shd w/F3-21
F5D6F3-024	F5D6F3	47.33801651	2/2/2011	287475.8	3841620.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	2	Scrap Bin	None	Rebar
F5D6F3-025	F5D6F3	46.38697433	2/2/2011	287478.4	3841622.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	3	Scrap Bin	None	Rebar
F5D6F3-026	F5D6F3	46.01483533	2/2/2011	287491.4	3841634.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.5	Scrap Bin	None	Rebar
F5D6F3-027	F5D6F3	44.30050276	12/10/2010	287473.4	3841641.8	RRD	Scrap	N/A	N/A	N/A	1	3	0.5	Scrap Bin	None	Steel cable
F5D6F3-028	F5D6F3	41.12655151	2/2/2011	287484.9186	3841629.891	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	3	Scrap Bin	None	Banding material
F5D6F3-029	F5D6F3	39.91479966	12/10/2010	287472.8229	3841640.281	RRD	Scrap	N/A	N/A	N/A	1	4	3	Scrap Bin	None	3ft rebar
F5D6F3-030	F5D6F3	39.84272946	2/2/2011	287472.2	3841620.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	3	Scrap Bin	None	2ft eng stake
F5D6F3-031	F5D6F3	38.41806567	2/16/2011	287499.4121	3841601.109	Cultural Debris	Scrap	N/A	N/A	N/A	3	18	15	Scrap Bin	None	Rebar
F5D6F3-032	F5D6F3	36.02977711	2/7/2011	287476.0862	3841622.472	Cultural Debris	Scrap	N/A	N/A	N/A	2	20	10	Scrap Bin	None	Cast pipe, rebar, metal clamp BHA
F5D6F3-033	F5D6F3	35.61614987	2/16/2011	287499.2999	3841602.23	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Reinf conc, rebar BHA
F5D6F3-034	F5D6F3	34.82917722	2/2/2011	287486.848	3841642.561	Cultural Debris	Scrap	N/A	N/A	N/A	4	12	30	Scrap Bin	None	Shd w/F3-31 BHA
F5D6F3-035	F5D6F3	33.75389861	2/2/2011	287480.4	3841622	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	5	Scrap Bin	None	Cast pipe
F5D6F3-036	F5D6F3	33.67087936	2/2/2011	287476.8	3841623.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	1	Scrap Bin	None	Rebar
F5D6F3-037	F5D6F3	32.68057335	2/2/2011	287486.9761	3841630.972	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	3	Scrap Bin	None	Metal plate
																Rebar
F5D6F3-038	F5D6F3	29.09654617	12/9/2010	287454.6	3841629.6	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	9mv on flag, 54mv on hole 4ft east deeper than 24 inches
F5D6F3-039	F5D6F3	28.42390505	2/2/2011	287488.1606	3841631.741	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	2	Scrap Bin	None	
F5D6F3-040	F5D6F3	26.16453361	2/2/2011	287481.8	3841622	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	2	Scrap Bin	None	Rebar
F5D6F3-041	F5D6F3	25.56920491	2/2/2011	287488.9504	3841632.261	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	4	Scrap Bin	None	Rebar
F5D6F3-042	F5D6F3	22.7969818	12/10/2010	287467.8	3841630.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	18	3	Scrap Bin	None	Rebar
F5D6F3-043	F5D6F3	21.44171905	2/1/2011	287487.5995	3841637.872	Cultural Debris	Scrap	N/A	N/A	N/A	3	4	4	Scrap Bin	None	2- 3inch llead rings
F5D6F3-044	F5D6F3	20.40980857	2/1/2011	287489.6	3841643.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	2	Scrap Bin	None	Cast pipe
F5D6F3-045	F5D6F3	20.1074221	2/7/2011	287471.7589	3841619	Cultural Debris	Scrap	N/A	N/A	N/A	5	30	12	Scrap Bin	None	Cast pipe

Anomaly ID	Grid	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6F3-046	F5D6F3	19.7151628	2/2/2011	287486.0591	3841623.56	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	3	Scrap Bin	None	Rebar
F5D6F3-047	F5D6F3	19.55346633	12/10/2010	287474.1913	3841641.041	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	1	Scrap Bin	None	Partial veh window frame
F5D6F3-048	F5D6F3	19.02608299	2/7/2011	287468.8	3841600.8	Cultural Debris	Scrap	N/A	N/A	N/A	4	40	45	Scrap Bin	None	5ft metal blade, pipe, rebar, banding BHA
F5D6F3-049	F5D6F3	18.71276283	2/1/2011	287487	3841641	Cultural Debris	Scrap	N/A	N/A	N/A	3	10	4	Scrap Bin	None	Conduit, cast pipe, heavy wire
F5D6F3-050	F5D6F3	18.37008112	2/2/2011	287475.3407	3841622.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	4	Scrap Bin	None	Lrg rebar
F5D6F3-051	F5D6F3	18.0299345	2/2/2011	287485.4167	3841633.927	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F3-40
F5D6F3-052	F5D6F3	17.91859245	12/10/2010	287468.6	3841629.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	1	Scrap Bin	None	Re-bar
F5D6F3-053	F5D6F3	17.37606634	2/15/2011	287465.0793	3841633.246	Cultural Debris	Scrap	N/A	N/A	N/A	1	28	35	Left in Place	None	
F5D6F3-054	F5D6F3	17.20861816	12/10/2010	287477	3841648.6	RRD	Scrap	N/A	N/A	N/A	1	6	1	Scrap Bin	None	1-lug
F5D6F3-055	F5D6F3	17.19941139	2/7/2011	287470	3841600	Cultural Debris	Scrap	N/A	N/A	N/A	2	30	8	Scrap Bin	None	Rebar, heavy wire
F5D6F3-056	F5D6F3	16.76234562	12/9/2010	287474.2438	3841635.976	RRD	Scrap	N/A	N/A	N/A	6	8	5	Scrap Bin	None	5-lugs, 1-fiber rtbc
F5D6F3-057	F5D6F3	16.52052069	12/9/2010	287472.2	3841647.2	SHD	Shared Target	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with F3-59
F5D6F3-058	F5D6F3	16.3873212	2/8/2011	287482.1349	3841645.439	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	30	Left in Place	None	
F5D6F3-059	F5D6F3	16.19665455	12/9/2010	287473.0823	3841646.908	MPPEH	Misc	Other (see comments)	N/A	N/A	1	1	0.1	Scrap Bin	None	1-arty primer
F5D6F3-060	F5D6F3	16.1385501	2/14/2011	287498.6	3841632.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	8	Scrap Bin	None	7ft steel cable BHA
F5D6F3-061	F5D6F3	16.08793639	2/1/2011	287498.4	3841635.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.1	Scrap Bin	None	Heavy wire
F5D6F3-062	F5D6F3	15.94028186	2/2/2011	287484.6	3841633.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Razor wire
F5D6F3-063	F5D6F3	15.66544056	2/2/2011	287494.4	3841633.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1	Scrap Bin	None	Rebar
F5D6F3-064	F5D6F3	15.64325523	12/9/2010	287470.4	3841643.4	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared with F3-110 S/E
F5D6F3-065	F5D6F3	15.59728169	2/2/2011	287489.3236	3841607.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	24	2	Scrap Bin	None	Rebar , spark plug BHA
F5D6F3-066	F5D6F3	15.18111515	12/9/2010	287457.4	3841646.4	MPPEH	Misc	Other (see comments)	N/A	N/A	2	3	0.2	Scrap Bin	None	2-arty primers
F5D6F3-067	F5D6F3	14.80933669	2/7/2011	287466.9667	3841601.52	Cultural Debris	Scrap	N/A	N/A	N/A	3	36	15	Scrap Bin	None	2-cast pipe, rebar BHA
F5D6F3-068	F5D6F3	14.61299542	12/10/2010	287466.1401	3841635.201	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6F3-069	F5D6F3	14.56738853	2/2/2011	287487.6	3841635.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1	Scrap Bin	None	Metal channel
F5D6F3-070	F5D6F3	14.46344757	2/2/2011	287491.2	3841630.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	3	Scrap Bin	None	Rebar
F5D6F3-071	F5D6F3	14.32411289	2/2/2011	287474.008	3841623.657	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shrd w/F3-50
F5D6F3-072	F5D6F3	13.81274414	2/2/2011	287471	3841625	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	1	Scrap Bin	None	Rebar
F5D6F3-073	F5D6F3	13.64886093	2/2/2011	287480.4	3841623.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.2	Scrap Bin	None	Heavy wire
F5D6F3-074	F5D6F3	12.90631765	2/15/2011	287471.3179	3841638.001	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	40	Left in Place	None	
F5D6F3-075	F5D6F3	12.88443279	2/2/2011	287486	3841625	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	2	Scrap Bin	None	Rebar
F5D6F3-076	F5D6F3	12.69972381	2/15/2011	287472.6379	3841638.001	Cultural Debris	Scrap	N/A	N/A	N/A	1	28	50	Left in Place	None	
F5D6F3-077	F5D6F3	12.66483677	2/2/2011	287473.4706	3841618.24	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	2	Scrap Bin	None	Rebar
F5D6F3-078	F5D6F3	12.62977695	2/2/2011	287470.0178	3841622.41	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	4	Scrap Bin	None	Rebar
F5D6F3-079	F5D6F3	12.59166145	2/1/2011	287485.2	3841635.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1	Scrap Bin	None	Conduit
F5D6F3-080	F5D6F3	12.56702061	2/2/2011	287492.2859	3841629.641	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F3-70
F5D6F3-081	F5D6F3	12.29077625	2/14/2011	287498.2	3841633.4	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F3-60 BHA
F5D6F3-082	F5D6F3	12.26601712	12/9/2010	287450.3786	3841644.751	RRD	Scrap	N/A	N/A	N/A	2	8	1.1	Scrap Bin	None	1-lug, comm wire
F5D6F3-083	F5D6F3	11.97095871	2/15/2011	287464.2	3841635	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared withF3-53
F5D6F3-084	F5D6F3	11.52997207	2/2/2011	287490.2	3841625.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.3	Scrap Bin	None	Heavy wire
F5D6F3-085	F5D6F3	11.28385734	12/10/2010	287481.2	3841649.4	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6F3-086	F5D6F3	11.16479871	2/15/2011	287468.8295	3841637.241	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	40	Left in Place	None	
F5D6F3-087	F5D6F3	10.93521428	12/9/2010	287473.2565	3841647.881	RRD	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Comm wire
F5D6F3-088	F5D6F3	10.71109143	2/1/2011	287491.7342	3841647.659	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	2	Scrap Bin	None	Cast pipe
F5D6F3-089	F5D6F3	10.53004074	2/1/2011	287488.8	3841642.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	1.5	Scrap Bin	None	3ft rebar
F5D6F3-090	F5D6F3	10.34283828	2/2/2011	287481.5519	3841625.132	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.2	Scrap Bin	None	Alum tent stk
F5D6F3-091	F5D6F3	9.895418942	2/2/2011	287494.8894	3841632.681	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	1	Scrap Bin	None	Rebar
F5D6F3-092	F5D6F3	9.751696877	2/2/2011	287486.8306	3841625.506	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	1	Scrap Bin	None	Rebar
F5D6F3-093	F5D6F3	9.660240042	12/9/2010	287451.2562	3841627.08	RRD	Scrap	N/A	N/A	N/A	2	4	1.5	Scrap Bin	None	1-lug, 50ft comm wire
F5D6F3-094	F5D6F3	9.295008329	2/2/2011	287487.9571	3841634.579	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.5	Scrap Bin	None	Banding
F5D6F3-095	F5D6F3	9.282850264	12/10/2010	287480.4	3841646.4	RRD	Scrap	N/A	N/A	N/A	1	4	1	Scrap Bin	None	1-lug
F5D6F3-096	F5D6F3	9.115590093	2/2/2011	287485	3841625	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F3-75
F5D6F3-097	F5D6F3	9.003138541	12/9/2010	287456.4	3841647.2	MPPEH	Misc	Other (see comments)	N/A	N/A	3	2	0.3	Scrap Bin	None	3-arty primers
F5D6F3-098	F5D6F3	8.600730171	12/10/2010	287467.4	3841635.8	RRD	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Comm wire
F5D6F3-099	F5D6F3	8.467143634	12/10/2010	287486.0549	3841648.641	RRD	Scrap	N/A	N/A	N/A	5	2	0.2	Scrap Bin	None	5 pices of heavy wire
F5D6F3-100	F5D6F3	8.4400806	12/10/2010	287466.0075	3841630.395	No Contact	Shared Target	N/A	N/A	N/A	0	0	0	Left in Place	None	Shared with F3-115 East
F5D6F3-101	F5D6F3	8.20550251	2/1/2011	287495.4	3841639.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	0.2	Scrap Bin	None	Nail, heavy wire
F5D6F3-102	F5D6F3	7.973550464	12/10/2010	287469.5876	3841630.759	RRD	Scrap	N/A	N/A	N/A	1	4	0.2	Scrap Bin	None	Metal ring
F5D6F3-103	F5D6F3	7.888731051	12/9/2010	287463.8247	3841638.225	RRD	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Heavy gauge wire
F5D6F3-104	F5D6F3	7.758020875	2/15/2011	287467.4	3841633.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	28	15	Left in Place	None	
F5D6F3-105	F5D6F3	7.715328979	2/2/2011	287489.8009	3841627.361	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.2	Scrap Bin	None	Razor wire
F5D6F3-106	F5D6F3	7.672176361	2/2/2011	287469.5874	3841624.32	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1	Scrap Bin	None	Rebar
F5D6F3-107	F5D6F3	7.653085707	2/2/2011	287468.8	3841622.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F3-078
F5D6F3-108	F5D6F3	7.637228956	2/2/2011	287467.3369	3841622.223	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	1	Scrap Bin	None	Rebar
F5D6F3-109	F5D6F3	7.435230681	12/9/2010	287469.3147	3841644.081	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No Contact all instruments
F5D6F3-110	F5D6F3	7.332347392	12/9/2010	287471	3841641	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Road/const debris 4ft North deeper than 24 in. Hill QA
F5D6F3-111	F5D6F3	6.451579942	12/9/2010	287468.6046	3841643.151	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	concur
F5D6F3-112	F5D6F3	6.418625625	2/1/2011	287497.2	3841638.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.2	Scrap Bin	None	No Contact all instruments
F5D6F3-113	F5D6F3	6.338603008	2/1/2011	287489.4531	3841644.841	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	4	Scrap Bin	None	Metal clamp
F5D6F3-114	F5D6F3	6.278700826	2/15/2011	287468.4	3841633.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	3	Left in Place	None	Cast pipe
F5D6F3-115	F5D6F3	6.243012767	2/15/2011	287466.5048	3841629.334	Cultural Debris	Scrap	N/A	N/A	N/A	1	28	15	Left in Place	None	
F5D6F3-116	F5D6F3	6.229474984	12/10/2010	287473.4	3841633.4	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all

Anomaly ID	Grid	Amplitude	Dlg Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6F3-117	F5D6F3	6.147347577	12/10/2010	287466.4661	3841634.201	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared with F3-104 const debris
F5D6F3-118	F5D6F3	6.088878154	2/7/2011	287467.4	3841600	Cultural Debris	Scrap	N/A	N/A	N/A	2	40	150	Scrap Bin	None	Reinf concrete culvert, 30ft cable BHA
F5D6F3-119	F5D6F3	5.999192712	2/7/2011	287470.8	3841619	Cultural Debris	Scrap	N/A	N/A	N/A	2	30	4	Scrap Bin	None	Rebar
F5D6F3-120	F5D6F3	5.959586143	2/2/2011	287464	3841600.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	1	Scrap Bin	None	30 in metal stk
F5D6F3-121	F5D6F3	5.881171982	12/10/2010	287481.8	3841647.2	RRD	Scrap	N/A	N/A	N/A	1	5	1	Scrap Bin	None	1-lug
F5D6F3-122	F5D6F3	5.84549033	2/2/2011	287477.2773	3841619.76	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	3	Scrap Bin	None	Lrg metal spcer, rebar
F5D6F3-123	F5D6F3	5.808165451	12/10/2010	287467.234	3841631.489	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.2	Scrap Bin	None	Heavy wire
F5D6F3-124	F5D6F3	5.757013418	2/2/2011	287485.5594	3841632.681	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	1	Scrap Bin	None	Rebar
F5D6F3-125	F5D6F3	5.719777108	2/2/2011	287483.1507	3841622.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.2	Scrap Bin	None	Heavy wire
F5D6F3-126	F5D6F3	5.553135734	2/15/2011	287469.4279	3841638.001	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	35	Left in Place	None	
F5D6F3-127	F5D6F3	5.530783653	2/7/2011	287469.4	3841620.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	3	Scrap Bin	None	Rebar BHA
F5D6F3-128	F5D6F3	5.499001721	2/7/2011	287499.7649	3841635.233	Cultural Debris	Scrap	N/A	N/A	N/A	2	30	2	Scrap Bin	None	Metal bracket, heavy wire BHA
F5D6F3-129	F5D6F3	5.489255905	2/2/2011	287472.4	3841626.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	1	Scrap Bin	None	Rebar
F5D6F3-130	F5D6F3	5.473999498	2/1/2011	287489	3841638	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	4	Scrap Bin	None	Cast pipe
F5D6F3-131	F5D6F3	5.469474791	2/1/2011	287496.2	3841638.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.5	Scrap Bin	None	Lrg rivets
F5D6F3-132	F5D6F3	5.463852404	2/7/2011	287497.8	3841634.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F3-128 BHA
F5D6F3-133	F5D6F3	5.460684774	2/1/2011	287479.8	3841638	RRD	Scrap	N/A	N/A	N/A	1	3	0.2	Scrap Bin	None	Ammo can latch
F5D6F3-134	F5D6F3	5.395250807	2/2/2011	287471.7841	3841625.84	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F3-72
F5D6F3-135	F5D6F3	5.311075376	2/2/2011	287490.8525	3841626.601	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F3-84
F5D6F3-136	F5D6F3	5.188586234	12/9/2010	287475.2	3841644.8	RRD	Scrap	N/A	N/A	N/A	1	1	0.1	Scrap Bin	None	Comm wire
F5D6F3-137	F5D6F3	5.061420217	2/1/2011	287490.7279	3841638.001	Cultural Debris	Scrap	N/A	N/A	N/A	3	4	10	Scrap Bin	None	2-pipe, wire
F5D6F3-138	F5D6F3	4.96589899	2/2/2011	287484.6	3841625.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.3	Scrap Bin	None	Razor wire
F5D6F3-139	F5D6F3	4.943662643	12/10/2010	287474.8	3841639.6	RRD	Scrap	N/A	N/A	N/A	1	3	1	Scrap Bin	None	Steel stake
F5D6F3-140	F5D6F3	4.895257023	12/10/2010	287468.5762	3841638.761	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6F3-141	F5D6F3	4.892271511	2/2/2011	287497.2	3841634.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	10	1	Scrap Bin	None	Rebar, razor wire
F5D6F3-142	F5D6F3	4.872134208	2/2/2011	287468.8	3841621.4	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F3-078
F5D6F3-143	F5D6F3	4.844411372	2/2/2011	287465.4	3841600	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	Heavy wire
F5D6F3-144	F5D6F3	4.637280955	2/2/2011	287485.5341	3841625.84	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.5	Scrap Bin	None	Rnd metal plate
F5D6F3-145	F5D6F3	4.605179654	2/1/2011	287494.8128	3841635.721	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	0.1	Scrap Bin	None	Nail, wire
F5D6F3-146	F5D6F3	4.581348682	12/9/2010	287470.0531	3841644.841	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No Contact all instruments
F5D6F3-147	F5D6F3	4.532696246	12/10/2010	287478.8	3841646.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	2	Scrap Bin	None	Pipe
F5D6F3-148	F5D6F3	4.489658194	12/10/2010	287471.171	3841631.921	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6F3-149	F5D6F3	4.469742553	2/1/2011	287492.6998	3841646.361	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F3-88
F5D6F3-150	F5D6F3	4.466035847	12/10/2010	287464.011	3841631.921	RRD	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Comm wiire
F5D6F3-151	F5D6F3	4.288425936	12/10/2010	287473.9195	3841637.241	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	30	Scrap Bin	None	Re-enforced concrete and pipe
F5D6F3-152	F5D6F3	3.972404972	12/10/2010	287466.7036	3841627.577	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared with F3-115
F5D6F3-153	F5D6F3	3.93311359	2/2/2011	287485.0026	3841631.161	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F3-28
F5D6F3-154	F5D6F3	3.838487394	12/9/2010	287476.5914	3841645.601	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No Contact all instruments
F5D6F3-155	F5D6F3	3.736457109	12/10/2010	287467.8	3841638	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared with F3-126
F5D6F3-156	F5D6F3	3.735654112	2/1/2011	287481.8	3841637.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.2	Scrap Bin	None	Alum tent stake
F5D6F3-157	F5D6F3	3.730417252	2/2/2011	287488.4	3841609	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F3-065 BHA
F5D6F3-158	F5D6F3	3.725235699	12/9/2010	287462.6	3841641	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No Contact all instruments
F5D6F3-159	F5D6F3	3.632733691	2/7/2011	287478.3458	3841625.08	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	2	Scrap Bin	None	Rebar BHA
F5D6F3-160	F5D6F3	3.556842457	2/1/2011	287498	3841636.4	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F3-61
F5D6F3-161	F5D6F3	3.478510492	2/2/2011	287464.5051	3841602.28	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F3-120
F5D6F3-162	F5D6F3	3.456318377	12/9/2010	287469	3841641.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared with F3-110 N/E 4ft
F5D6F3-163	F5D6F3	3.37739086	12/10/2010	287470.8	3841634.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	8	Scrap Bin	None	1ft heavy metal pipe
F5D6F3-164	F5D6F3	3.36549033	2/7/2011	287469.8673	3841619.76	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/F3-45 BHA
F5D6F3-165	F5D6F3	3.33584975	12/10/2010	287479.7665	3841647.881	RRD	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Comm wire
F5D6F3-166	F5D6F3	3.246695353	2/2/2011	287473.314	3841621.28	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ F3-30
F5D6F3-167	F5D6F3	3.226217586	2/2/2011	287476.4	3841625.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	Heavy wire
F5D6F3-168	F5D6F3	3.080463769	12/10/2010	287470.2	3841633.4	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Left in Place	None	Shared with F3-163
F5D6F3-169	F5D6F3	3.062729459	2/7/2011	287470.6	3841620.6	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w//F3-27 BHA
F5D6F3-170	F5D6F3	3.042289495	2/15/2011	287472.6	3841630.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	30	Left in Place	None	
F5D6F3-171	F5D6F3	3.009998698	12/10/2010	287488.8	3841649.4	RRD	Scrap	N/A	N/A	N/A	1	1	0.1	Scrap Bin	None	Comm wire
F5D6F3-172	F5D6F3	3.009450522	2/15/2011	287467.8209	3841627.361	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	25	Left in Place	None	
			5/5/2011													Expended grnd signal flares MDAS. ASA F3-01 MAG/DIG start 03/24/11 1200, Complete 05/05/11 1200. See
F5D6F3-173	F5D6F3			287500	3841631.371	MPPEH	Flare	M127A1, Star Parachute	Empty	N/A	2	12	1	Consolidation Point	None	Additional Items also.
F5D6F4-001	F5D6F4	106.7127827	12/10/2010	287474.722	3841655.482	RRD	Scrap	N/A	N/A	N/A	100	12	55	Scrap Bin	None	4.5 buckets of RRD
F5D6F4-002	F5D6F4	47.843710168	12/10/2010	287491.0168	3841653.262	RRD	Scrap	N/A	N/A	N/A	25	10	14	Scrap Bin	None	14- lugs , 11 fiber rtbc
F5D6F4-003	F5D6F4	34.78461689	12/10/2010	287474.2372	3841656.589	RRD	Scrap	N/A	N/A	N/A	2	3	0.2	Scrap Bin	None	2-pieces of wire
F5D6F4-004	F5D6F4	22.1625309	12/10/2010	287487.8	3841659.4	RRD	Scrap	N/A	N/A	N/A	3	4	3	Scrap Bin	None	3-lugs
F5D6F4-005	F5D6F4	14.95892525	12/9/2010	287476.8	3841650.2	RRD	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Comm wire
F5D6F4-006	F5D6F4	7.648083701	12/9/2010	287466.8216	3841650.161	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.2	Scrap Bin	None	Alum can
F5D6F4-007	F5D6F4	7.602788324	12/10/2010	287492.964	3841657.566	RRD	Scrap	N/A	N/A	N/A	2	6	1.5	Scrap Bin	None	Metal plate and metal stake
F5D6F4-008	F5D6F4	5.536789414	12/9/2010	287469.6	3841652.4	RRD	Scrap	N/A	N/A	N/A	3	6	1	Scrap Bin	None	MRE foil trash
F5D6F4-009	F5D6F4	5.180571076	12/10/2010	287493	3841650.2	RRD	Scrap	N/A	N/A	N/A	1	1	0.1	Scrap Bin	None	Comm wire
F5D6F4-010	F5D6F4	4.256457535	12/10/2010	287490.8	3841658.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.5	Scrap Bin	None	Metal tube
F5D6F4-011	F5D6F4	4.07909048	12/10/2010	287490.4019	3841661.153	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Metal buckle
F5D6F4-012	F5D6F4	3.427593982	12/10/2010	287483.1939	3841650.905	RRD	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Comm wire
F5D6F4-013	F5D6F4	3.404506683	12/10/2010	287497	3841656.2	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all

Anomaly ID	Grid	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6F4-014	F5D6F4	3.127777572	12/10/2010	287492.8	3841660.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.1	Scrap Bin	None	1-nail
F5D6F4-015	F5D6F4	3.045913127	12/10/2010	287489.6	3841660.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.1	Scrap Bin	None	Metal buckle
F5D6G1-001	F5D6G1	379.3936034	1/25/2011	287532.3875	3841539.575	Cultural Debris	Scrap	N/A	N/A	N/A	3	48	300	Scrap Bin	None	Marshal matting BHA
F5D6G1-002	F5D6G1	356.784244	1/19/2011	287536.9877	3841545.296	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	12	Scrap Bin	None	6ft pipe
F5D6G1-003	F5D6G1	255.2031795	1/18/2011	287500.1501	3841527.823	Cultural Debris	Scrap	N/A	N/A	N/A	2	0	30	Scrap Bin	None	Page wire fencing, barb wire BHA
F5D6G1-004	F5D6G1	159.4967518	1/18/2011	287507.125	3841547.75	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	75	Scrap Bin	None	18 ft pipe BHA
F5D6G1-005	F5D6G1	158.966305	1/18/2011	287508.125	3841547.125	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G1-04 BHA
F5D6G1-006	F5D6G1	126.1182618	2/1/2011	287534.972	3841548.295	Cultural Debris	Scrap	N/A	N/A	N/A	18	48	1300	Scrap Bin	None	20ft rebar, reinf conc pipe, banding, 15- reinf conc. BHA
F5D6G1-007	F5D6G1	80.37592269	1/25/2011	287534.75	3841542.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	40	110	Scrap Bin	None	Marshal matting BHA.
F5D6G1-008	F5D6G1	57.36288378	1/18/2011	287514.8018	3841537.686	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	15	Scrap Bin	None	2ft solid steel bar
F5D6G1-009	F5D6G1	46.28943373	1/19/2011	287528.75	3841537.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	1	Scrap Bin	None	Rebar
F5D6G1-010	F5D6G1	44.8914547	2/9/2011	287510.75	3841536.25	Cultural Debris	Scrap	N/A	N/A	N/A	4	40	40	Scrap Bin	None	2-reinf conc, rebar, re-nf wire BHA
F5D6G1-011	F5D6G1	40.72958662	2/9/2011	287509.4747	3841539.723	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	30	Scrap Bin	None	14 ft pipe, BHA
F5D6G1-012	F5D6G1	39.06498528	1/18/2011	287512	3841536.25	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	15	Scrap Bin	None	Re-inf conc, rebar
F5D6G1-013	F5D6G1	37.64677763	2/9/2011	287509.625	3841536.25	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G1-10 BHA
F5D6G1-014	F5D6G1	32.78722583	1/18/2011	287504.3897	3841538.882	Cultural Debris	Scrap	N/A	N/A	N/A	6	4	2	Scrap Bin	None	Metal plate, 3- wire,, 2-nails
F5D6G1-015	F5D6G1	31.2407263	1/25/2011	287529.455	3841534.707	Cultural Debris	Scrap	N/A	N/A	N/A	4	48	40	Scrap Bin	None	2-rebar, reinf conc, wire. BHA
F5D6G1-016	F5D6G1	30.44149886	2/1/2011	287535.2998	3841545.361	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.2	Scrap Bin	None	Heavy wire/banding vertical
F5D6G1-017	F5D6G1	28.70003844	1/18/2011	287501.7094	3841541.009	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	3	Scrap Bin	None	Automotive part
F5D6G1-018	F5D6G1	24.34127283	2/1/2011	287537.125	3841548	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G1-06
F5D6G1-019	F5D6G1	22.71228504	1/25/2011	287528	3841536.5	Cultural Debris	Scrap	N/A	N/A	N/A	7	48	4	Scrap Bin	None	3-rebar, 4-heavy wire BHA
F5D6G1-020	F5D6G1	19.73226357	2/1/2011	287540	3841548.25	Cultural Debris	Scrap	N/A	N/A	N/A	2	36	100	Scrap Bin	None	Reinf conc, steel cable BHA
F5D6G1-021	F5D6G1	19.51641911	2/9/2011	287508.75	3841537.375	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G1-10 BHA
F5D6G1-022	F5D6G1	18.15257023	1/18/2011	287501.625	3841546.875	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	5	Scrap Bin	None	8ft hydraulic hose, re-inf wire
F5D6G1-023	F5D6G1	17.06303978	1/18/2011	287512	3841548	Cultural Debris	Scrap	N/A	N/A	N/A	3	48	120	Scrap Bin	None	18 ft pipe, metal culvert piece, ball heavy wire. BHA
F5D6G1-024	F5D6G1	16.07713032	1/18/2011	287507.5	3841549.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	10	Scrap Bin	None	Ball of page wire fencing BHA
F5D6G1-025	F5D6G1	15.36900996	1/31/2011	287519.3534	3841541.875	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	15	Scrap Bin	None	Wire mesh BHA
F5D6G1-026	F5D6G1	14.95096826	1/18/2011	287532.25	3841547	MPPEH	Grenade	Other (See Comments)	Empty	N/A	1	3	0.2	Consolidation Point	None	Empty 40mm cartridge casing
F5D6G1-027	F5D6G1	13.19733572	2/9/2011	287509.5	3841542.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	15	Scrap Bin	None	Lrg ball of page wire BHA
F5D6G1-028	F5D6G1	12.98294503	2/1/2011	287538.5	3841548.875	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G1-20 BHA
F5D6G1-029	F5D6G1	11.22037305	1/18/2011	287502.7866	3841543.391	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Heavy re-inf wire
F5D6G1-030	F5D6G1	11.10169752	1/18/2011	287514.2242	3841540.291	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.2	Scrap Bin	None	Heavy re-inf wire
F5D6G1-031	F5D6G1	10.76772952	1/18/2011	287502.875	3841547.75	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	2	Scrap Bin	None	Shifting lever
F5D6G1-032	F5D6G1	10.53958966	1/18/2011	287511.7817	3841540.244	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Re-inf wire
F5D6G1-033	F5D6G1	9.494229321	1/31/2011	287527.7585	3841534.036	Cultural Debris	Scrap	N/A	N/A	N/A	6	36	60	Scrap Bin	None	4-reinf conc, pipe, wire BHA
F5D6G1-034	F5D6G1	8.80509162	1/18/2011	287511.625	3841542.5	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	3	Scrap Bin	None	Re-inf concrete, heavy re-inf wire.
F5D6G1-035	F5D6G1	8.798945159	2/9/2011	287508.125	3841544.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	0.2	Scrap Bin	None	Heavy re-i nf wire BHA
F5D6G1-036	F5D6G1	8.510096133	1/31/2011	287526.875	3841535.625	Cultural Debris	Scrap	N/A	N/A	N/A	2	30	3	Scrap Bin	None	Rebar
F5D6G1-037	F5D6G1	8.098687326	2/1/2011	287538.5075	3841549.911	Cultural Debris	Scrap	N/A	N/A	N/A	2	30	2	Scrap Bin	None	Rebar, oil filter
F5D6G1-038	F5D6G1	7.965016902	1/31/2011	287526.625	3841532.75	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G1-33 BHA
F5D6G1-039	F5D6G1	7.884567439	1/18/2011	287506	3841537.125	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.3	Scrap Bin	None	Re-inf wire
F5D6G1-040	F5D6G1	7.488510695	1/31/2011	287527.2167	3841531.636	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G1-33 BHA
F5D6G1-041	F5D6G1	7.224492327	1/18/2011	287532.25	3841544.625	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	10	Scrap Bin	None	Re-inf conc, wire
F5D6G1-042	F5D6G1	7.045813198	1/31/2011	287524.0299	3841536.61	Cultural Debris	Scrap	N/A	N/A	N/A	2	36	40	Scrap Bin	None	Reinf conc, rebar BHA
F5D6G1-043	F5D6G1	6.939393371	1/18/2011	287531.125	3841548.625	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	4	Scrap Bin	None	Automotive part
F5D6G1-044	F5D6G1	6.737506092	1/18/2011	287500.875	3841547.75	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G1-22
F5D6G1-045	F5D6G1	6.010499791	1/18/2011	287523.0441	3841540	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.2	Scrap Bin	None	Heavy re-inf wire
F5D6G1-046	F5D6G1	5.55030477	1/18/2011	287513.75	3841546.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.2	Scrap Bin	None	U-clamp
F5D6G1-047	F5D6G1	5.54212805	1/18/2011	287529.5765	3841547.076	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	10	Scrap Bin	None	Lrg bolt in fence post
F5D6G1-048	F5D6G1	5.416996241	1/18/2011	287507.125	3841537.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Lrg nail
F5D6G1-049	F5D6G1	4.922951102	1/18/2011	287532.5	3841543.125	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1	Scrap Bin	None	Rebar
F5D6G1-050	F5D6G1	4.668938532	1/18/2011	287514.625	3841534.875	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Heavy re-inf wire
F5D6G1-051	F5D6G1	4.630132042	1/18/2011	287502.875	3841536.625	Cultural Debris	Scrap	N/A	N/A	N/A	3	3	0.1	Scrap Bin	None	Heavy wire
F5D6G1-052	F5D6G1	4.620021581	2/9/2011	287514.75	3841544	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	2	Scrap Bin	None	Rebar BHA
F5D6G1-053	F5D6G1	4.483105823	1/18/2011	287530.375	3841547.75	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	0.2	Scrap Bin	None	Nail, heavy banding
F5D6G1-054	F5D6G1	4.039950216	1/18/2011	287514.75	3841545.875	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Heavy re-inf wire
F5D6G1-055	F5D6G1	3.96688252	2/1/2011	287528.625	3841547.875	Cultural Debris	Scrap	N/A	N/A	N/A	2	36	50	Scrap Bin	None	Reinf conc, BHA
F5D6G1-056	F5D6G1	3.956428123	1/18/2011	287515.4232	3841540.935	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.1	Scrap Bin	None	Alum can piece
F5D6G1-057	F5D6G1	3.796787811	1/19/2011	287538.25	3841544.75	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G1-02
F5D6G1-058	F5D6G1	3.592162058	1/18/2011	287513.5	3841541.875	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6G1-059	F5D6G1	3.551542103	1/18/2011	287530.5	3841545.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	20	1	Scrap Bin	None	Re-bar
F5D6G1-060	F5D6G1	3.456679642	1/18/2011	287515.375	3841535.75	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Barb wire
F5D6G1-061	F5D6G1	3.32785283	1/18/2011	287517.25	3841543.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Heavy re-inf wire
F5D6G1-062	F5D6G1	3.275310572	1/18/2011	287529.875	3841548.625	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G1-43
F5D6G1-063	F5D6G1	3.026740595	1/31/2011	287525.125	3841534.875	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w//G1-42 BHA
F5D6G1-064	F5D6G1	3	2/9/2011	287516.5	3841544.75	Cultural Debris	Scrap	N/A	N/A	N/A	1	20	0.2	Scrap Bin	None	Heavy wire BHA
F5D6G1-065	F5D6G1	999	3/10/2011	287501.5496	3841527.485	Cultural Debris	Scrap	N/A	N/A	N/A	3000	72	184750	Scrap Bin	None	45 cyds re-i nf concrete, 2500 reinf wire, 4 tree stumps. ASA G1-01 MAG/DIG POLY started 1400 022111, comp 1200 031011.

Anomaly ID	Grid	Amplitude	Dlg Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
			3/15/2011													4-lrg pieces reinf concrete, 3-lrg concrete pillars, 1-smaller conc embutment, 1-lrg brick housing, 1-pipe,2-rebar, ASA G1-02 MAG/DIG POLY start 0700 031411, comp 0900 031511.
F5D6G1-066	F5D6G1	999		287518.284	3841549.999	Cultural Debris	Scrap	N/A	N/A	N/A	12	60	35000	Scrap Bin	None	Shd w/ F2-2 BHA prev dug
F5D6G2-001	F5D6G2	339.0210266	1/19/2011	287500.4	3841561.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Long pipe
F5D6G2-002	F5D6G2	257.0608215	1/24/2011	287511	3841577	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	6	Scrap Bin	None	Reinf conc, 2-wire
F5D6G2-003	F5D6G2	238.0871581	1/25/2011	287502.2	3841550.8	Cultural Debris	Scrap	N/A	N/A	N/A	3	3	50	Scrap Bin	None	Re-inf concrete culvert BHA
F5D6G2-004	F5D6G2	189.4017751	2/14/2011	287513.757	3841572.808	Cultural Debris	Scrap	N/A	N/A	N/A	10	24	275	Scrap Bin	None	Sheet etal BHA
F5D6G2-005	F5D6G2	179.8993719	2/7/2011	287545.5583	3841598.284	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	50	Scrap Bin	None	Fire hydrant w/6ft 8"pipe, eng stk, 5-re-inf concrete, sheet metal BHA
F5D6G2-006	F5D6G2	168.9221381	1/20/2011	287526.0587	3841558.862	Cultural Debris	Scrap	N/A	N/A	N/A	8	36	600	Scrap Bin	None	8- re-inf concrete, 3ft rebar, heavy wire BHA
F5D6G2-007	F5D6G2	158.9942322	2/14/2011	287509.2	3841568	Cultural Debris	Scrap	N/A	N/A	N/A	10	36	200	Scrap Bin	None	2re-inf conc, pipe BHA
F5D6G2-008	F5D6G2	157.3311091	1/24/2011	287524.5923	3841563.449	Cultural Debris	Scrap	N/A	N/A	N/A	3	24	78	Scrap Bin	None	6ft 3" pipe, metal plate BHA
F5D6G2-009	F5D6G2	153.4047126	1/20/2011	287533.3909	3841565.254	Cultural Debris	Scrap	N/A	N/A	N/A	2	18	75	Scrap Bin	None	2ft eng stk
F5D6G2-010	F5D6G2	152.37866	1/20/2011	287526.1254	3841593.654	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	5	Scrap Bin	None	Shd w/ G2-007 BHA
F5D6G2-011	F5D6G2	145.1856079	2/14/2011	287509.2	3841569.4	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Reinf conc
F5D6G2-012	F5D6G2	138.4240345	1/24/2011	287514.5422	3841570.187	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	75	Scrap Bin	None	16ft pipe, rebar, eng stk, 150-heavy wire pit BHA
F5D6G2-013	F5D6G2	132.2679291	2/15/2011	287505.8	3841572.6	Cultural Debris	Scrap	N/A	N/A	N/A	153	24	50	Scrap Bin	None	Tank road wheel, 8ft square stock BHA
F5D6G2-014	F5D6G2	132.1409988	1/31/2011	287503.7239	3841557.753	Cultural Debris	Scrap	N/A	N/A	N/A	2	36	110	Scrap Bin	None	Shd w/G2-013 BHA
F5D6G2-015	F5D6G2	110.2686538	2/15/2011	287508.2	3841576.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Reinf conc, grnd rod BHA
F5D6G2-016	F5D6G2	104.3272531	1/24/2011	287527.2807	3841551.022	Cultural Debris	Scrap	N/A	N/A	N/A	2	24	30	Scrap Bin	None	Cast pipe (vertical) BHA
F5D6G2-017	F5D6G2	96.88324193	2/15/2011	287517.7349	3841584.611	Cultural Debris	Scrap	N/A	N/A	N/A	1	20	1	Scrap Bin	None	20- reinf concrete, 4-pipe, banding BHA
F5D6G2-018	F5D6G2	85.82015228	2/16/2011	287527.8	3841557.4	Cultural Debris	Scrap	N/A	N/A	N/A	25	40	1500	Scrap Bin	None	
F5D6G2-019	F5D6G2	84.89660296	1/24/2011	287522.7498	3841550.928	Cultural Debris	Scrap	N/A	N/A	N/A	1	48	10	Left in Place	None	
F5D6G2-020	F5D6G2	84.33219978	1/24/2011	287512.1484	3841582.959	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	20	Scrap Bin	None	20ft square stock
F5D6G2-021	F5D6G2	83.06758242	1/24/2011	287525.5135	3841561.325	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	12	Scrap Bin	None	5ft pipe BHA
F5D6G2-022	F5D6G2	82.36777826	1/28/2011	287504.91	3841580.698	RRD	Scrap	N/A	N/A	N/A	1	20	5	Scrap Bin	None	Ammo can lid
F5D6G2-023	F5D6G2	73.01968229	1/20/2011	287520.952	3841593.088	Cultural Debris	Scrap	N/A	N/A	N/A	4	4	20	Scrap Bin	None	6ft chain, pipe, 2-U-clamps
F5D6G2-024	F5D6G2	68.96984863	1/19/2011	287529.6	3841577	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	4	Scrap Bin	None	2ft pipe
F5D6G2-025	F5D6G2	65.74394815	1/19/2011	287530.4293	3841576.242	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G2-24
F5D6G2-026	F5D6G2	65.18049777	1/19/2011	287544.7525	3841599.942	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	8	Scrap Bin	None	Re-bar 8 ft
F5D6G2-027	F5D6G2	63.86706541	2/14/2011	287535.2	3841550.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	12	Scrap Bin	None	10 ft rebar BHA
F5D6G2-028	F5D6G2	59.71110153	1/20/2011	287538.8	3841583	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	12	Scrap Bin	None	12ft rebar vert BHA
F5D6G2-029	F5D6G2	58.11977338	2/15/2011	287508.714	3841580.307	Cultural Debris	Scrap	N/A	N/A	N/A	50	18	4	Scrap Bin	None	Peices of heavy metal wire BHA
F5D6G2-030	F5D6G2	56.15111498	1/24/2011	287513.5396	3841580.937	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	4	Scrap Bin	None	Stk, metal strap
F5D6G2-031	F5D6G2	53.36631443	2/15/2011	287520.0426	3841550.063	Cultural Debris	Scrap	N/A	N/A	N/A	2	24	12	Scrap Bin	None	3ft pipe, 1ft cast pipe BHA
F5D6G2-032	F5D6G2	52.4417305	1/20/2011	287520.4	3841592	Cultural Debris	Scrap	N/A	N/A	N/A	3	6	12	Scrap Bin	None	Re-inf concrete, rebar, cable I-loop
F5D6G2-033	F5D6G2	51.32947705	1/20/2011	287511.0833	3841592.632	Cultural Debris	Scrap	N/A	N/A	N/A	4	4	15	Scrap Bin	None	Steel plates
F5D6G2-034	F5D6G2	51.18674921	1/25/2011	287504.7595	3841567.225	Cultural Debris	Scrap	N/A	N/A	N/A	3	6	1	Scrap Bin	None	Rebar, wire, metal bar
F5D6G2-035	F5D6G2	48.05851253	1/24/2011	287512.844	3841593.501	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	10	Scrap Bin	None	Metal plate
F5D6G2-036	F5D6G2	45.99201581	2/16/2011	287526.8	3841553.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G2-018 BHA
F5D6G2-037	F5D6G2	44.5924072	1/20/2011	287538.6	3841559.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	48	90	Scrap Bin	None	Lrg ball barb wire, 6"x30" steel plate BHA
F5D6G2-038	F5D6G2	43.49583054	1/20/2011	287536.1244	3841584.459	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	15	Scrap Bin	None	Ball of re-inf wire BHA
F5D6G2-039	F5D6G2	42.29485702	1/24/2011	287513	3841580	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G2-030
F5D6G2-040	F5D6G2	40.20577693	1/31/2011	287516.8089	3841555.365	DMM	Small Arms Br:Small Arms Brass		(See Commer	(See Commer	1	30	2	Consolidation Point	None	115 - 5.56 mm DMM BHA
F5D6G2-041	F5D6G2	39.58387033	1/20/2011	287506.5371	3841568.732	Cultural Debris	Scrap	N/A	N/A	N/A	4	10	6	Scrap Bin	None	Pipe, 2-wire, nail
F5D6G2-042	F5D6G2	39.4527092	1/20/2011	287539.8	3841557.6	Cultural Debris	Scrap	N/A	N/A	N/A	4	24	30	Scrap Bin	None	Re-inf conc, barb wire, eng stk, sheet metal
F5D6G2-043	F5D6G2	39.28754897	1/25/2011	287511.2366	3841567.981	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	2	Scrap Bin	None	Pipe, rebar
F5D6G2-044	F5D6G2	37.49668209	1/19/2011	287542.689	3841595.588	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	1	Scrap Bin	None	Rebar
F5D6G2-045	F5D6G2	36.26563263	1/20/2011	287535.2	3841558.4	Cultural Debris	Scrap	N/A	N/A	N/A	7	48	60	Scrap Bin	None	Cast pipe, 4-rebar, angle iron, sheet metal BHA
F5D6G2-046	F5D6G2	36.2537926	1/20/2011	287523.4304	3841591.224	Cultural Debris	Scrap	N/A	N/A	N/A	3	6	5	Scrap Bin	None	2-pipe, wire
F5D6G2-047	F5D6G2	35.02880788	2/14/2011	287511.89	3841568.75	Cultural Debris	Scrap	N/A	N/A	N/A	2	24	8	Scrap Bin	None	Cast pipe, heavy wire BHA
F5D6G2-048	F5D6G2	34.40394972	2/15/2011	287509	3841574.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G2-013 BHA
F5D6G2-049	F5D6G2	33.96707152	1/19/2011	287533.4	3841579.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	2	Scrap Bin	None	Metal pad
F5D6G2-050	F5D6G2	33.2930336	2/15/2011	287506.4	3841575.6	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G2-013 BHA
F5D6G2-051	F5D6G2	33.06462478	1/24/2011	287536.2	3841555.2	Cultural Debris	Scrap	N/A	N/A	N/A	4	24	165	Scrap Bin	None	Reinf conc, 3-pipe, BHA
F5D6G2-052	F5D6G2	31.50706092	2/8/2011	287549.912	3841597.314	Cultural Debris	Scrap	N/A	N/A	N/A	8	12	1000	Scrap Bin	None	Reinf conc culvert BHA
F5D6G2-053	F5D6G2	31.08027987	1/20/2011	287519.4738	3841589.545	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	6	Scrap Bin	None	Metal plates
F5D6G2-054	F5D6G2	30.58463096	1/24/2011	287509.8	3841576.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	5	Scrap Bin	None	8ft carrige bolt
F5D6G2-055	F5D6G2	30.30011175	2/8/2011	287549.7118	3841599.428	Cultural Debris	Scrap	N/A	N/A	N/A	2	24	150	Scrap Bin	None	Reinf concrete, metal plate BHA
F5D6G2-056	F5D6G2	30.043182	1/25/2011	287514.1607	3841566.539	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.5	Scrap Bin	None	Lag bolt, wire
F5D6G2-057	F5D6G2	28.36165618	1/25/2011	287504.6	3841559.8	Cultural Debris	Scrap	N/A	N/A	N/A	3	4	4	Scrap Bin	None	Lrg nut, 2-nails
F5D6G2-058	F5D6G2	27.46126556	1/20/2011	287500.6	3841571	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Prev dug w// grid F2
F5D6G2-059	F5D6G2	27.3992443	1/24/2011	287512.4	3841584.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	45	Scrap Bin	None	Reinf concrete
F5D6G2-060	F5D6G2	27.22547722	1/28/2011	287506.8	3841564.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	36	8	Scrap Bin	None	Eng stk, pipe BHA
F5D6G2-061	F5D6G2	27.18419075	1/24/2011	287522.4	3841559	Cultural Debris	Scrap	N/A	N/A	N/A	2	18	20	Scrap Bin	None	Re-inf conc, steel beam BHA
F5D6G2-062	F5D6G2	27.05541229	1/24/2011	287522	3841560.4	Cultural Debris	Scrap	N/A	N/A	N/A	3	24	30	Scrap Bin	None	2-reinf conc,rebar BHA
F5D6G2-063	F5D6G2	27.03038977	1/20/2011	287500.4	3841585.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Prev dug w/Grid F2
F5D6G2-064	F5D6G2	26.82655907	1/19/2011	287511.8	3841571	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.2	Scrap Bin	None	Small wrech
F5D6G2-065	F5D6G2	26.62197158	1/25/2011	287515.6404	3841572.548	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	0.1	Scrap Bin	None	Heavy wire
F5D6G2-066	F5D6G2	26.60668945	1/25/2011	287507.2	3841578.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	5	2	Scrap Bin	None	Pipe, heavy wire
F5D6G2-067	F5D6G2	26.54361884	1/31/2011	287517.8053	3841556.756	Cultural Debris	Scrap	N/A	N/A	N/A	1	40	3	Scrap Bin	None	5 gal metal bucket BHA

Anomaly ID	Grid	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6G2-068	F5D6G2	26.19249327	2/14/2011	287511.4314	3841573.347	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G2-004 BHA
F5D6G2-069	F5D6G2	26.14431953	1/20/2011	287537.8	3841559	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G2-037 BHA
F5D6G2-070	F5D6G2	25.92777824	1/24/2011	287514.8	3841582.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	4	Scrap Bin	None	Rebar
F5D6G2-071	F5D6G2	25.78462005	2/1/2011	287530.8716	3841551.473	Cultural Debris	Scrap	N/A	N/A	N/A	4	38	100	Scrap Bin	None	3- reinf conc, pipe BHA
F5D6G2-072	F5D6G2	25.2805061	1/19/2011	287532.4316	3841570.978	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	1	Scrap Bin	None	Pipe
F5D6G2-073	F5D6G2	24.23540497	1/25/2011	287502.2	3841554.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	4	Scrap Bin	None	6x4 steel, metal strap
F5D6G2-074	F5D6G2	24.05935691	1/25/2011	287508.76	3841571.75	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	8	Scrap Bin	None	Pipe
F5D6G2-075	F5D6G2	23.68764757	1/24/2011	287514.15	3841574.75	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.5	Scrap Bin	None	8ft of heavy wire
F5D6G2-076	F5D6G2	23.28357957	1/31/2011	287520.9074	3841556.004	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	600	Scrap Bin	None	Lrg re-inf concrete block BHA
F5D6G2-077	F5D6G2	22.11845133	1/24/2011	287514.3874	3841583.676	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G2-020
F5D6G2-078	F5D6G2	21.9757576	1/25/2011	287503.6	3841568	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	1	Scrap Bin	None	Rebar
F5D6G2-079	F5D6G2	21.00480122	1/31/2011	287502.577	3841553.015	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	20	Scrap Bin	None	Lrg metal box BHA
F5D6G2-080	F5D6G2	19.88988048	1/24/2011	287513.52	3841595	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G2-035
F5D6G2-081	F5D6G2	19.22881617	2/16/2011	287527.92	3841555.25	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G2-018 BHA
F5D6G2-082	F5D6G2	19.18122863	1/19/2011	287533.8	3841577.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.5	Scrap Bin	None	Bolt, beer can
F5D6G2-083	F5D6G2	19.1616497	1/20/2011	287539.6	3841582.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd/w G2-028 BHA
F5D6G2-084	F5D6G2	18.94188036	2/14/2011	287537.2825	3841559.971	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	1	Scrap Bin	None	Flat bar stock
F5D6G2-085	F5D6G2	18.36753315	1/20/2011	287540.124	3841584.068	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G2-028 BHA
F5D6G2-086	F5D6G2	18.25389099	2/1/2011	287530.2	3841553.8	Cultural Debris	Scrap	N/A	N/A	N/A	3	42	25	Scrap Bin	None	Rinf conc, 30in pipe, alum can BHA
F5D6G2-087	F5D6G2	17.74920881	1/20/2011	287535.1	3841556.75	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G2-045 BHA
F5D6G2-088	F5D6G2	17.67874818	1/20/2011	287528.3712	3841561.306	Cultural Debris	Scrap	N/A	N/A	N/A	4	24	12	Scrap Bin	None	2-metal plate, metal pan, sheet metal BHA
F5D6G2-089	F5D6G2	17.61314011	1/25/2011	287515.2	3841566.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	1	Scrap Bin	None	12ft heavy wire
F5D6G2-090	F5D6G2	17.40988039	1/24/2011	287509.88	3841577.75	Cultural Debris	Scrap	N/A	N/A	N/A	6	6	0.2	Scrap Bin	None	Wire
F5D6G2-091	F5D6G2	16.94821358	1/28/2011	287506.6	3841565.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	36	30	Scrap Bin	None	Reinf conc, barb wire BHA
F5D6G2-092	F5D6G2	16.89988048	1/24/2011	287512.41	3841595	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G2-035
F5D6G2-093	F5D6G2	16.14416671	1/24/2011	287514.1265	3841577.068	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.5	Scrap Bin	None	Metal braket
F5D6G2-094	F5D6G2	16.11686122	2/14/2011	287540.5588	3841598.153	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	5	Scrap Bin	None	Lrg sheet metal BHA
F5D6G2-095	F5D6G2	15.78991683	1/19/2011	287543.602	3841594.327	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	1	Scrap Bin	None	Metal reel part
F5D6G2-096	F5D6G2	15.56777859	1/20/2011	287527.6	3841590.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	3	Scrap Bin	None	Metal mount.
F5D6G2-097	F5D6G2	15.55292618	1/19/2011	287524.0712	3841575.56	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	20	Scrap Bin	None	Re-Inf concrete
F5D6G2-098	F5D6G2	15.1563549	1/24/2011	287512.8	3841570.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.2	Scrap Bin	None	Heavy wire
F5D6G2-099	F5D6G2	14.93294048	2/15/2011	287507.8	3841573.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G2-013 BHA
F5D6G2-100	F5D6G2	14.58607346	1/19/2011	287527.8209	3841568.83	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	8	Scrap Bin	None	Re-inf concrete
F5D6G2-101	F5D6G2	14.38718325	1/19/2011	287536.8125	3841562.716	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	1	Scrap Bin	None	Pliers
F5D6G2-102	F5D6G2	13.7786026	1/20/2011	287512	3841565	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Nail
F5D6G2-103	F5D6G2	13.63331127	1/20/2011	287506.8	3841589	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	1	Scrap Bin	None	Rebar, heavy wire
F5D6G2-104	F5D6G2	13.39660168	1/19/2011	287541.2	3841588.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	15	1	Scrap Bin	None	Lrg oil filter
F5D6G2-105	F5D6G2	13.34071064	1/25/2011	287506	3841561.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	2	Scrap Bin	None	Heavy rebar
F5D6G2-106	F5D6G2	13.24447407	1/19/2011	287522.4879	3841572.538	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	12	Scrap Bin	None	Reinf conc dug the 19th.
F5D6G2-107	F5D6G2	13.11955341	2/14/2011	287539.62	3841597.25	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G2-104 BHA
F5D6G2-108	F5D6G2	12.97533226	1/25/2011	287508.2	3841565.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	1	Scrap Bin	None	Rebar
F5D6G2-109	F5D6G2	12.79875075	1/24/2011	287525.85	3841564.25	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G2-008 BHA
F5D6G2-110	F5D6G2	12.75603008	1/28/2011	287503.4	3841580	Cultural Debris	Scrap	N/A	N/A	N/A	1	20	50	Scrap Bin	None	Metal reinf hose BHA
F5D6G2-111	F5D6G2	12.75457382	1/24/2011	287533.4	3841554.4	Cultural Debris	Scrap	N/A	N/A	N/A	11	40	110	Scrap Bin	None	4-rfconc, 2-cable,4-angle iron, metal strap BHA
F5D6G2-112	F5D6G2	12.44527245	1/20/2011	287521.2	3841589	Cultural Debris	Scrap	N/A	N/A	N/A	3	8	1.5	Scrap Bin	None	Pipe, 2-nuts
F5D6G2-113	F5D6G2	12.44354057	1/25/2011	287518	3841572.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1	Scrap Bin	None	Metal bracket
F5D6G2-114	F5D6G2	12.31365871	1/19/2011	287541.6	3841556	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	0.2	Scrap Bin	None	Barb wire, re-inf wire
F5D6G2-115	F5D6G2	12.13001595	1/20/2011	287518.5609	3841586.676	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Comm wire
F5D6G2-116	F5D6G2	11.93026511	1/19/2011	287539.689	3841561.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.2	Scrap Bin	None	Capacitor
F5D6G2-117	F5D6G2	11.90765666	1/24/2011	287538.2414	3841556.004	Cultural Debris	Scrap	N/A	N/A	N/A	6	24	28	Scrap Bin	None	4-cast pipe, 2-reinf concrete BHA
F5D6G2-118	F5D6G2	11.35525035	1/25/2011	287517.8	3841577.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	10	Scrap Bin	None	Reinf conc, wire
F5D6G2-119	F5D6G2	11.03741931	1/25/2011	287510.2	3841562.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Alum can
F5D6G2-120	F5D6G2	10.97596264	1/24/2011	287534.2	3841555.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G2-111 BHA
F5D6G2-121	F5D6G2	10.83886005	1/20/2011	287535.4076	3841588.895	Cultural Debris	Scrap	N/A	N/A	N/A	3	36	4	Scrap Bin	None	Oil can, oil filter, filter screen BHA
F5D6G2-122	F5D6G2	10.73137706	1/25/2011	287516.0868	3841573.939	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.2	Scrap Bin	None	Heavy wire
F5D6G2-123	F5D6G2	10.51758167	1/19/2011	287549.0362	3841581.546	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.2	Scrap Bin	None	Heavy wire
F5D6G2-124	F5D6G2	10.31863407	1/19/2011	287546.2315	3841555.986	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Banding
F5D6G2-125	F5D6G2	10.28805542	1/24/2011	287508.8	3841582.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	0.1	Scrap Bin	None	Reinf wire, nail
F5D6G2-126	F5D6G2	9.968570709	1/24/2011	287538	3841554.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	36	12	Scrap Bin	None	Heavy rebar, metal filter BHA
F5D6G2-127	F5D6G2	9.921543334	1/20/2011	287532.9772	3841561.099	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	50	Scrap Bin	None	Re-inf concrete
F5D6G2-128	F5D6G2	9.760034561	1/25/2011	287509.2	3841562	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Heavy wire
F5D6G2-129	F5D6G2	9.540528209	1/31/2011	287523.0695	3841556.004	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	15	Scrap Bin	None	12ft chain BHA
F5D6G2-130	F5D6G2	9.472669629	1/19/2011	287547.4535	3841556.738	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Reinf wire
F5D6G2-131	F5D6G2	9.211760858	1/20/2011	287538.0779	3841589.765	Cultural Debris	Scrap	N/A	N/A	N/A	2	36	100	Scrap Bin	None	Re-inf conc, rebar BHA
F5D6G2-132	F5D6G2	9.159403012	1/19/2011	287541.85	3841596.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Re-inf wire
F5D6G2-133	F5D6G2	8.813121089	1/28/2011	287505.0944	3841564.224	Cultural Debris	Scrap	N/A	N/A	N/A	2	36	50	Scrap Bin	None	Reinf conc.
F5D6G2-134	F5D6G2	8.532630916	1/25/2011	287503	3841562.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6		Scrap Bin	None	Heavy wire
F5D6G2-135	F5D6G2	8.409122172	1/19/2011	287548.4493	3841582.307	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G2-123
F5D6G2-136	F5D6G2	8.31487942	1/19/2011	287531.3146	3841567.97	Cultural Debris	Scrap	N/A	N/A	N/A	2	20	2	Scrap Bin	None	2- pipe
F5D6G2-137	F5D6G2	8.127388585	1/25/2011	287515.4343	3841568.831	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1.5	Scrap Bin	None	Pipe
F5D6G2-138	F5D6G2	7.839880466	1/28/2011	287509.8	3841595	Cultural Debris	Scrap	N/A	N/A	N/A	3	24	3	Scrap Bin	None	Csst pipe BHA
F5D6G2-139	F5D6G2	7.591904638	1/20/2011	287500.2	3841574.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Prev dug w/Grid F2

Anomaly ID	Grid	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6G2-140	F5D6G2	7.516098499	1/19/2011	287524.4	3841556	Cultural Debris	Scrap	N/A	N/A	N/A	2	10	0.2	Scrap Bin	None	Heavy wire, metal braket
F5D6G2-141	F5D6G2	7.496884821	1/25/2011	287517.6	3841564.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	2	Scrap Bin	None	Heavy wire,shaft
F5D6G2-142	F5D6G2	7.291431543	1/19/2011	287534.4997	3841567.981	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	3	Scrap Bin	None	Re-inf concrete
F5D6G2-143	F5D6G2	6.989433289	1/20/2011	287535.4	3841562	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1	Scrap Bin	None	Metal bace vertical
F5D6G2-144	F5D6G2	6.965724943	1/19/2011	287537.6	3841563.4	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G2-101
F5D6G2-145	F5D6G2	6.942008494	1/20/2011	287509	3841593.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	3	Scrap Bin	None	Hitch
F5D6G2-146	F5D6G2	6.90130806	1/19/2011	287536	3841553	Cultural Debris	Scrap	N/A	N/A	N/A	3	20	3	Scrap Bin	None	Rebar, braket, wire
F5D6G2-147	F5D6G2	6.887262344	1/28/2011	287505.6	3841562.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	0.5	Scrap Bin	None	Heavy wire BHA
F5D6G2-148	F5D6G2	6.885769842	1/24/2011	287512.6	3841576.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Wire
F5D6G2-149	F5D6G2	6.646106242	2/1/2011	287537.2	3841550.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	0.5	Scrap Bin	None	3in pipe coupler BHA
F5D6G2-150	F5D6G2	6.31572234	1/20/2011	287501.8807	3841574.763	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Lrg heavy wire
F5D6G2-151	F5D6G2	6.307769773	2/1/2011	287538.4	3841550.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	1	Scrap Bin	None	Oil filter BHA
F5D6G2-152	F5D6G2	6.293438909	1/20/2011	287504	3841573.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.1	Scrap Bin	None	Wire, nail
F5D6G2-153	F5D6G2	6.168219651	1/20/2011	287500.57	3841573.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	9	1	Scrap Bin	None	Lrg metal handle
F5D6G2-154	F5D6G2	6.119067663	1/19/2011	287527	3841565.8	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6G2-155	F5D6G2	5.954759121	2/14/2011	287514.8	3841562	Cultural Debris	Scrap	N/A	N/A	N/A	2	28	8	Scrap Bin	None	Guide cable, pipe BHA
F5D6G2-156	F5D6G2	5.753256868	1/20/2011	287501.668	3841570.252	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.3	Scrap Bin	None	Heavy wire
F5D6G2-157	F5D6G2	5.596915836	1/20/2011	287522.6863	3841599.945	MPPEH	Flare	Other (see comments)	Empty	N/A	1	4	0.1	Consolidation Point	None	Alum tube from bround signal flare
F5D6G2-158	F5D6G2	5.584057806	1/24/2011	287512	3841580.8	Cultural Debris	Scrap	N/A	N/A	N/A	3	12	1	Scrap Bin	None	2-wire, rebar
F5D6G2-159	F5D6G2	5.551113375	1/19/2011	287526.6428	3841571.75	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	1.5	Scrap Bin	None	Conduit, lrg nail
F5D6G2-160	F5D6G2	5.54433729	1/20/2011	287500.7887	3841581.53	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	1	Scrap Bin	None	Rebar
F5D6G2-161	F5D6G2	5.40862894	1/20/2011	287503.4	3841575.4	Cultural Debris	Scrap	N/A	N/A	N/A	3	8	0.1	Scrap Bin	None	Wire
F5D6G2-162	F5D6G2	5.390956402	1/19/2011	287532.2	3841557.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	10	1	Scrap Bin	None	Rebar, nail
F5D6G2-163	F5D6G2	5.356645582	1/20/2011	287504.6	3841574.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.1	Scrap Bin	None	Wire, nai l
F5D6G2-164	F5D6G2	5.346059473	1/24/2011	287531.5579	3841569.44	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	5	Scrap Bin	None	Cable, wire
F5D6G2-165	F5D6G2	5.288334421	1/19/2011	287531.5579	3841573.201	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.1	Scrap Bin	None	Nail, comm wire
F5D6G2-166	F5D6G2	5.193218826	1/24/2011	287520.0607	3841581.437	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.2	Scrap Bin	None	Wire
F5D6G2-167	F5D6G2	4.942043781	1/19/2011	287524.2	3841566.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	0.2	Scrap Bin	None	Heavy wire
F5D6G2-168	F5D6G2	4.876745701	1/19/2011	287540	3841568	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6G2-169	F5D6G2	4.842391489	1/19/2011	287519.2	3841568.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	4	Scrap Bin	None	metal bar
F5D6G2-170	F5D6G2	4.800947666	1/19/2011	287538.8	3841562	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Re-inf wire
F5D6G2-171	F5D6G2	4.666999636	1/20/2011	287525.8385	3841589.662	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.5	Scrap Bin	None	Rebar
F5D6G2-172	F5D6G2	4.623178958	1/20/2011	287503.6	3841587.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	1	Scrap Bin	None	Sheet metal, wire
F5D6G2-173	F5D6G2	4.619148731	1/24/2011	287516.4	3841583	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.5	Scrap Bin	None	Rebar
F5D6G2-174	F5D6G2	4.247378718	1/19/2011	287543.7123	3841554.124	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	2	Scrap Bin	None	Cast pipe
F5D6G2-175	F5D6G2	4.195023535	1/19/2011	287526.2	3841567.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Wire
F5D6G2-176	F5D6G2	4.122480869	1/24/2011	287513.4	3841591.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	5	Scrap Bin	None	Cast pipe
F5D6G2-177	F5D6G2	4.062712199	1/19/2011	287537.1375	3841591.205	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.1	Scrap Bin	None	Re-inf wire
F5D6G2-178	F5D6G2	3.849655392	1/19/2011	287518.6696	3841569.678	SHD	Shared target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shared w/ G2-169
F5D6G2-179	F5D6G2	3.705308912	1/19/2011	287520.4	3841568.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	wire
F5D6G2-180	F5D6G2	3.701149225	1/20/2011	287522.6	3841589	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	1	Scrap Bin	None	Heavy wire, lrg bolt
F5D6G2-181	F5D6G2	3.673505305	1/20/2011	287509.8	3841588.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.1	Scrap Bin	None	Nail, heavy wire
F5D6G2-182	F5D6G2	3.594394053	1/19/2011	287522.9735	3841566.852	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Nail
F5D6G2-183	F5D6G2	3.583535671	1/19/2011	287521.6	3841566.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Lrg nail
F5D6G2-184	F5D6G2	3.462362782	1/19/2011	287523.9734	3841568.439	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Heavy wire
F5D6G2-185	F5D6G2	3.453819346	1/19/2011	287535.2185	3841569.451	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6G2-186	F5D6G2	3.40741792	1/24/2011	287521.35	3841563.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	Lrg nail
F5D6G2-187	F5D6G2	3.357991695	1/19/2011	287531.2	3841558.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	0.1	Scrap Bin	None	Nail, wire
F5D6G2-188	F5D6G2	3.329272473	1/20/2011	287518.47	3841594.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Heavy re-inf wire
F5D6G2-189	F5D6G2	3.320103884	1/20/2011	287529	3841586	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6G2-190	F5D6G2	3.318722247	1/19/2011	287533.2	3841582.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	1	Scrap Bin	None	Re-inf wire
F5D6G2-191	F5D6G2	3.298148155	1/20/2011	287530	3841586	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	No contact all
F5D6G2-192	F5D6G2	3.249985454	1/19/2011	287540.8	3841553.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	0.2	Scrap Bin	None	Re-inf wire, banding
F5D6G2-193	F5D6G2	3.23126316	1/20/2011	287526.6	3841591.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1	Scrap Bin	None	Cast pipe
F5D6G2-194	F5D6G2	3.229225636	1/20/2011	287501.8	3841568	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Prev dug w/ Grid F2.
F5D6G2-195	F5D6G2	3.223109721	1/24/2011	287521.6	3841582.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	0.2	Scrap Bin	None	Nails
F5D6G2-196	F5D6G2	3.201578379	1/19/2011	287542.2	3841550.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	0.1	Scrap Bin	None	Barb wire, nail
F5D6G2-197	F5D6G2	3.184084691	1/19/2011	287538.5772	3841593.457	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	1	Scrap Bin	None	Pipe
F5D6G2-198	F5D6G2	3.102225303	1/20/2011	287501.6	3841573.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G2-150
			4/5/2011													0.3 lb Charge Supplementary "TNT" for Artillery Projectile.
F5D6G2-199	F5D6G2	999		287505.3269	3841549.999	DMM	Misc	Other (see comments)	HE	N/A	1	36	0.3	Left in Place	Demo	Found 032811 and Destroyed 033011. ASA G2-01
			3/10/2011													MAG/DIG POLY Start 0930 031511 Comp 0900 040511.
F5D6G2-200	F5D6G2	999		287499.9943	3841600.001	Cultural Debris	Scrap	N/A	N/A	N/A	300	24	460	Scrap Bin	None	R/F conc, metal pipes, cast pipes, rebar,metal tubing, square stock, r/f wire. ASA G2-02 MAG/DIG started 030711 1300, comp 031011 1330.
			2/15/2011													30-eng stks, 3-rolls razor wire, 15ft rebar, barb wire.
F5D6G2-201	F5D6G2	999		287550.001	3841596.522	Cultural Debris	Scrap	N/A	N/A	N/A	35	12	285	Scrap Bin	None	MAG/DIG POLY Completed on 02/08/2011.
F5D6G3-001	F5D6G3	2209.170347	1/31/2011	287516.9307	3841624.584	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	25	Scrap Bin	None	3ft cast pipe
F5D6G3-002	F5D6G3	1990.184326	1/31/2011	287516	3841624.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	45	Scrap Bin	None	Lrg cast pipe
F5D6G3-003	F5D6G3	1896.878782	2/7/2011	287503.2	3841639	Cultural Debris	Scrap	N/A	N/A	N/A	3	48	40	Scrap Bin	None	Sheet metal, alum box, spring coil BHA
F5D6G3-004	F5D6G3	825.4408905	2/3/2011	287508.1981	3841615.762	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	250	Scrap Bin	None	Lr reinf conc pipe BHA

Anomaly ID	Grid	Amplitude	Dlg Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6G3-005	F5D6G3	532.1360768	1/28/2011	287503.6489	3841639.72	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	85	Scrap Bin	None	10ft metal shoot BHA
F5D6G3-006	F5D6G3	480.8714795	2/3/2011	287507.9354	3841614.741	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G3-04 BHA
F5D6G3-007	F5D6G3	388.9564695	1/28/2011	287522.7132	3841624.707	Cultural Debris	Scrap	N/A	N/A	N/A	6	30	100	Scrap Bin	None	6- cast pipe
F5D6G3-008	F5D6G3	378.039245	1/28/2011	287521.7712	3841624.519	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G3-07
F5D6G3-009	F5D6G3	370.8742674	1/27/2011	287527	3841602	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	1.5	Scrap Bin	None	QC SEED 2ft x2" pipe, heavy wire
F5D6G3-010	F5D6G3	330.6522826	1/27/2011	287519.0566	3841601.547	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	15	Scrap Bin	None	Lrg cast pipe
F5D6G3-011	F5D6G3	326.5469118	1/28/2011	287521.2	3841625.4	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G3-07
F5D6G3-012	F5D6G3	313.5379925	1/27/2011	287517.8	3841620.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	20	Scrap Bin	None	Lrg metal plate
F5D6G3-013	F5D6G3	312.0644988	2/14/2011	287501.2218	3841632.517	Cultural Debris	Scrap	N/A	N/A	N/A	2	28	600	Scrap Bin	None	Re-inf conc bsrrier, 4ft pipe BHA
F5D6G3-014	F5D6G3	296.2665936	2/3/2011	287515.1401	3841636.292	TBD	TBD	Other (see comments)	(See Comner	(See Commer	5	40	200	Scrap Bin	None	5-lrg cast pipe, point would not clear w/EM-61 17mv due to lrg anomaly outside CTO-11
F5D6G3-015	F5D6G3	281.3282567	1/28/2011	287517.2	3841633.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	80	Scrap Bin	None	Lrg cast pipe
F5D6G3-016	F5D6G3	222.2295929	1/28/2011	287509.9495	3841627.993	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	80	Scrap Bin	None	7 ft 4" pipe.
F5D6G3-017	F5D6G3	212.6844095	1/28/2011	287510.2706	3841628.985	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G3-016
F5D6G3-018	F5D6G3	189.6289702	1/27/2011	287528.815	3841617.495	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	20	Scrap Bin	None	Metal culvert piece
F5D6G3-019	F5D6G3	189.2647661	1/31/2011	287514.8	3841621.6	Cultural Debris	Scrap	N/A	N/A	N/A	4	3	4	Scrap Bin	None	Metal bracket, 2-bolts, wire
F5D6G3-020	F5D6G3	187.1721483	1/31/2011	287509.8327	3841635.67	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	15	Scrap Bin	None	Bumper
F5D6G3-021	F5D6G3	178.0711773	1/31/2011	287514.2	3841622.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	6	Scrap Bin	None	3ft pipe
F5D6G3-022	F5D6G3	175.8481564	1/27/2011	287528.6599	3841616.667	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G3-18
F5D6G3-023	F5D6G3	162.5654448	1/27/2011	287517.8	3841609.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	15	Scrap Bin	None	Cast pipe
F5D6G3-024	F5D6G3	159.4972991	1/27/2011	287522.6	3841611.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	6	Scrap Bin	None	Copper radiator tank, metal bracket
F5D6G3-025	F5D6G3	148.1854365	1/31/2011	287516.3839	3841626.041	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G3-2
F5D6G3-026	F5D6G3	144.7467842	1/31/2011	287510.3873	3841634.736	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G3-20
F5D6G3-027	F5D6G3	125.4563369	2/3/2011	287509.8	3841641.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	100	Scrap Bin	None	Lrg metal truck side rail BHA
F5D6G3-028	F5D6G3	118.4292963	1/28/2011	287507.5089	3841604.329	Cultural Debris	Scrap	N/A	N/A	N/A	2	30	90	Scrap Bin	None	Lrg cast pipe, conduit bender BHA
F5D6G3-029	F5D6G3	112.0436175	2/14/2011	287500.5952	3841631.58	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G3-014 BHA
F5D6G3-030	F5D6G3	103.9222933	1/27/2011	287522.822	3841622.826	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	20	Scrap Bin	None	Cast pipe
F5D6G3-031	F5D6G3	101.1088714	1/28/2011	287518.4	3841632	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	45	Scrap Bin	None	Cast pipe end
F5D6G3-032	F5D6G3	99.00800025	2/14/2011	287507.2	3841636.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	24	15	Scrap Bin	None	Metal plate, rebar BHA
F5D6G3-033	F5D6G3	94.60504147	1/27/2011	287523.4	3841621.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G3-30
F5D6G3-034	F5D6G3	92.86737815	1/19/2011	287544.8	3841600.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G2-26
F5D6G3-035	F5D6G3	92.65983533	2/14/2011	287506.9138	3841637.859	Cultural Debris	Scrap	N/A	N/A	N/A	2	30	25	Scrap Bin	None	Bandig, re-inf concrete BHA
F5D6G3-036	F5D6G3	89.86601672	1/27/2011	287517.2177	3841603.766	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	10	Scrap Bin	None	7ft rebar
F5D6G3-037	F5D6G3	85.77214831	1/31/2011	287512.4	3841635.6	Cultural Debris	Scrap	N/A	N/A	N/A	4	18	8	Scrap Bin	None	Metal box, 3-lrg rivets
F5D6G3-038	F5D6G3	82.96453642	1/28/2011	287506.2716	3841604.962	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	G3-028 BHA
F5D6G3-039	F5D6G3	73.41686192	1/28/2011	287519.1442	3841630.065	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	25	Scrap Bin	None	Lrg cast pipe
F5D6G3-040	F5D6G3	70.06865068	1/27/2011	287517.6735	3841610.652	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G3-10
F5D6G3-041	F5D6G3	68.62076567	1/27/2011	287520.2	3841613.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	3	Scrap Bin	None	Cast pipe
F5D6G3-042	F5D6G3	61.69545311	1/28/2011	287522.395	3841626.168	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G3-07
F5D6G3-043	F5D6G3	60.08590918	2/14/2011	287501.5391	3841631.6	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G3-013
F5D6G3-044	F5D6G3	51.92678423	2/14/2011	287501.3386	3841634.21	Cultural Debris	Scrap	N/A	N/A	N/A	1	48	5	Scrap Bin	None	Lrg re-bar BHA
F5D6G3-045	F5D6G3	50.01844405	2/3/2011	287502	3841622.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	3	Scrap Bin	None	5ft rebar in tree root, BHA
F5D6G3-046	F5D6G3	43.91888808	1/27/2011	287516.4	3841609.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	3	Scrap Bin	None	Heavy rebar
F5D6G3-047	F5D6G3	43.51436604	1/27/2011	287517.6023	3841619.46	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	8	Scrap Bin	None	Bar stock, barb wire
F5D6G3-048	F5D6G3	39.01017101	2/3/2011	287514.1819	3841633.48	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	6	Scrap Bin	None	5ft heavy rebar BHA
F5D6G3-049	F5D6G3	37.62317657	2/16/2011	287500.6	3841603	Cultural Debris	Scrap	N/A	N/A	N/A	4	18	80	Scrap Bin	None	Reinf concrete, rebar, 2-cast pipe. BHA
F5D6G3-050	F5D6G3	37.5124563	1/27/2011	287524.2186	3841624.005	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	2	Scrap Bin	None	3ft thin pipe
F5D6G3-051	F5D6G3	35.39513396	1/27/2011	287510.8	3841609	Cultural Debris	Scrap	N/A	N/A	N/A	4	12	4	Scrap Bin	None	Tin sheeting
F5D6G3-052	F5D6G3	32.42710494	1/27/2011	287519.6	3841607.8	MPPEH	Small Arms Br	Small Arms Brass	Empty	er (See Commer	2	8	0.1	Consolidation Point	None	7.62mm empty
F5D6G3-053	F5D6G3	31.83665846	1/28/2011	287528.6	3841619.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	3	Scrap Bin	None	Metalshift lever BHA
F5D6G3-054	F5D6G3	31.02980083	1/27/2011	287521.0707	3841615.266	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	2	Scrap Bin	None	Rebar
F5D6G3-055	F5D6G3	31.00872039	2/14/2011	287506	3841639	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	8	Scrap Bin	None	5 ft angle iron BHA
F5D6G3-056	F5D6G3	29.06581496	1/27/2011	287532.6	3841607.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	5	Scrap Bin	None	6x5 metal plate
F5D6G3-057	F5D6G3	28.07943724	1/27/2011	287535.8	3841612.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Heavy wire vertical
F5D6G3-058	F5D6G3	27.72685043	1/27/2011	287516.6158	3841608.427	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G3-46
F5D6G3-059	F5D6G3	26.023077	1/27/2011	287513.8	3841607.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	3	Scrap Bin	None	3 ft rebar
F5D6G3-060	F5D6G3	25.65289306	1/27/2011	287520.4	3841602.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	6	Scrap Bin	None	Bar stock, wire
F5D6G3-061	F5D6G3	25.27983533	2/14/2011	287505.1148	3841637.548	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G3-55 BHA
F5D6G3-062	F5D6G3	25.15500646	1/27/2011	287512.6641	3841612.581	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.3	Scrap Bin	None	Metal cap, wire
F5D6G3-063	F5D6G3	24.51276015	1/27/2011	287521.8	3841614.4	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G3-54
F5D6G3-064	F5D6G3	24.49668664	1/31/2011	287514.2813	3841632.604	RRD	Scrap	N/A	N/A	N/A	2	8	1.5	Consolidation Point	None	Lift lug,data plate
F5D6G3-065	F5D6G3	24.09455364	1/27/2011	287538.526	3841604.904	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	1	Scrap Bin	None	Reinf wire
F5D6G3-066	F5D6G3	23.61966808	1/27/2011	287520.8148	3841601.909	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G3-60
F5D6G3-067	F5D6G3	23.1849693	1/28/2011	287506.5961	3841606.013	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G3-28 BHA
F5D6G3-068	F5D6G3	23.01185225	1/27/2011	287511.4	3841611.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	5	Scrap Bin	None	Tin sheeting
F5D6G3-069	F5D6G3	21.93125152	1/27/2011	287529.6	3841619	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.2	Scrap Bin	None	Heavy wire
F5D6G3-070	F5D6G3	21.64110755	1/27/2011	287518.4	3841618.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G3-47
F5D6G3-071	F5D6G3	21.36613655	1/27/2011	287522	3841604.2	Cultural Debris	Scrap	N/A	N/A	N/A	5	6	5	Scrap Bin	None	2-bolts, 2-pipe, heavy wire
F5D6G3-072	F5D6G3	20.693367	1/31/2011	287512.4	3841626.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	1	Scrap Bin	None	Rebar, wire
F5D6G3-073	F5D6G3	20.53553581	1/27/2011	287512	3841620.2	Cultural Debris	Scrap	N/A	N/A	N/A	4	6	3	Scrap Bin	None	Rebar, 3-pipe pieces
F5D6G3-074	F5D6G3	19.02684593	2/14/2011	287503.6	3841636.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	2	Scrap Bin	None	Sheet metal BHA
F5D6G3-075	F5D6G3	18.29609043	2/7/2011	287503.6585	3841641.188	Cultural Debris	Scrap	N/A	N/A	N/A	1	20	2	Scrap Bin	None	Sheet metal BHA

Anomaly ID	Grid	Amplitude	Dlg Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6G3-076	F5D6G3	17.91057458	1/27/2011	287524.8496	3841623.284	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G3-50
F5D6G3-077	F5D6G3	17.78256607	1/31/2011	287513	3841626	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	0.3	Scrap Bin	None	Wire
F5D6G3-078	F5D6G3	17.03361746	1/28/2011	287516.5171	3841631.729	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.2	Scrap Bin	None	Rebar
F5D6G3-079	F5D6G3	16.14750671	1/27/2011	287517.6	3841618	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G3-47
F5D6G3-080	F5D6G3	16.11973571	1/31/2011	287508.2	3841639	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.1	Scrap Bin	None	Alum can
F5D6G3-081	F5D6G3	16.11460358	1/28/2011	287522.3287	3841630.507	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	12	Scrap Bin	None	Lrg metal bracket
F5D6G3-082	F5D6G3	15.84693527	1/27/2011	287519.4	3841605.6	Cultural Debris	Scrap	N/A	N/A	N/A	5	12	100	Scrap Bin	None	3-reinf conc, shovel handle, alum
F5D6G3-083	F5D6G3	15.74872016	1/31/2011	287505	3841642.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	1	Scrap Bin	None	Heavy reinf wire
F5D6G3-084	F5D6G3	15.64527797	1/27/2011	287518.0247	3841615.905	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	5	Scrap Bin	None	Lrg shackle
F5D6G3-085	F5D6G3	15.30244258	1/31/2011	287512.1691	3841637.698	Cultural Debris	Scrap	N/A	N/A	N/A	1	20	8	Scrap Bin	None	Cast pipe
F5D6G3-086	F5D6G3	14.94938532	2/14/2011	287503.872	3841635.898	Cultural Debris	Scrap	N/A	N/A	N/A	1	20	2	Scrap Bin	None	Rebar BHA
F5D6G3-087	F5D6G3	14.81456379	1/31/2011	287504.9734	3841614.263	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	0.2	Scrap Bin	None	Wire, nail
F5D6G3-088	F5D6G3	14.74651241	1/28/2011	287522.6	3841629.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G3-081
F5D6G3-089	F5D6G3	14.39877796	2/3/2011	287507.8	3841642.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G3-27 BHA
F5D6G3-090	F5D6G3	14.28177452	1/27/2011	287530.2	3841615.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	0.1	Scrap Bin	None	Heavy wire
F5D6G3-091	F5D6G3	14.19232177	1/31/2011	287502.8	3841636.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	10	Scrap Bin	None	Cast pipe
F5D6G3-092	F5D6G3	13.93192031	2/1/2011	287503.0827	3841612.545	Cultural Debris	Scrap	N/A	N/A	N/A	3	12	130	Scrap Bin	None	Reinf conc
F5D6G3-093	F5D6G3	13.82136165	1/27/2011	287518.539	3841604.797	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G3-82
F5D6G3-094	F5D6G3	13.64616023	1/28/2011	287507.2853	3841639.797	Cultural Debris	Scrap	N/A	N/A	N/A	3	36	40	Scrap Bin	None	Reif cinc, cast pipe, sheet metal BHA
F5D6G3-095	F5D6G3	13.4202377	1/31/2011	287518.0039	3841623.013	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	5	Scrap Bin	None	Cast pipe, wire
F5D6G3-096	F5D6G3	13.29759308	1/27/2011	287521.888	3841618.389	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	2	Scrap Bin	None	Rebar, nail
F5D6G3-097	F5D6G3	13.28959292	2/3/2011	287507.4976	3841627.73	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	3	Scrap Bin	None	Rebar vertical BHA
F5D6G3-098	F5D6G3	13.06272846	1/27/2011	287520.2826	3841608.494	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	Heavy wire
F5D6G3-099	F5D6G3	12.91930646	1/28/2011	287523.602	3841626.928	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	10	Scrap Bin	None	Metal shackle
F5D6G3-100	F5D6G3	12.34876384	1/31/2011	287502.5656	3841641.165	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	4	Scrap Bin	None	18in metal channel
F5D6G3-101	F5D6G3	12.10342311	1/31/2011	287513.2	3841628.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	1	Scrap Bin	None	Rebar
F5D6G3-102	F5D6G3	12.07971191	1/27/2011	287521.6	3841602.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	2	Scrap Bin	None	Rebar
F5D6G3-103	F5D6G3	11.5715165	1/31/2011	287500.8081	3841635.255	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	3	Scrap Bin	None	Cast pipe
F5D6G3-104	F5D6G3	11.0141344	2/8/2011	287500.2	3841634.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	40	10	Scrap Bin	None	Cast pipe, banding BHA
F5D6G3-105	F5D6G3	10.77569283	1/28/2011	287522.7027	3841627.643	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	1.5	Scrap Bin	None	Pipe, wire
F5D6G3-106	F5D6G3	10.62809924	2/14/2011	287505.0157	3841636.078	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	1	Scrap Bin	None	Banding BHA
F5D6G3-107	F5D6G3	10.581448	1/28/2011	287501.4814	3841621.321	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ G3-094 BHA
F5D6G3-108	F5D6G3	10.30862562	2/7/2011	287502.129	3841638.219	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1	Scrap Bin	None	Rebar BHA
F5D6G3-109	F5D6G3	10.16100735	1/31/2011	287509.1381	3841640.57	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.2	Scrap Bin	None	Wire
F5D6G3-110	F5D6G3	9.719058987	1/31/2011	287504.4	3841644.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.3	Scrap Bin	None	Banding
F5D6G3-111	F5D6G3	9.662575714	1/20/2011	287522.8	3841600.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Consolidation Point	None	Shd w/ G2-157
F5D6G3-112	F5D6G3	9.659946439	1/31/2011	287509.6	3841618.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	0.5	Scrap Bin	None	Bolt, nail
F5D6G3-113	F5D6G3	9.545515059	1/27/2011	287527.2	3841614.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	2	Scrap Bin	None	2ft rebar
F5D6G3-114	F5D6G3	9.474063614	1/27/2011	287524.1939	3841601.314	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	2	Scrap Bin	None	Oil filter, wire
F5D6G3-115	F5D6G3	9.214373647	1/28/2011	287539.4421	3841612.581	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.5	Scrap Bin	None	Razor wire BHA
F5D6G3-116	F5D6G3	9.156782726	1/27/2011	287512.1235	3841615.673	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Heavy wire
F5D6G3-117	F5D6G3	8.883395689	2/3/2011	287514.7074	3841614.741	Cultural Debris	Scrap	N/A	N/A	N/A	3	12	3	Scrap Bin	None	Pipe nipple, sheet metal, nail BHA
F5D6G3-118	F5D6G3	8.374671888	1/27/2011	287516.7785	3841615.038	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	8	Scrap Bin	None	Reinf conc, rebar
F5D6G3-119	F5D6G3	8.294579504	1/31/2011	287505.6	3841643.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Banding
F5D6G3-120	F5D6G3	8.244095799	1/27/2011	287529.8	3841611.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	1	Scrap Bin	None	Rebar
F5D6G3-121	F5D6G3	8.207778916	1/31/2011	287509.4	3841633.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.3	Scrap Bin	None	Wire
F5D6G3-122	F5D6G3	8.163592338	1/28/2011	287519.2	3841626.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.3	Scrap Bin	None	Metal stake
F5D6G3-123	F5D6G3	7.933568403	1/27/2011	287546.13	3841600.25	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G3-34
F5D6G3-124	F5D6G3	7.674013737	1/27/2011	287518.2006	3841607.727	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	4	Scrap Bin	None	Cast pipe
F5D6G3-125	F5D6G3	7.332042232	1/27/2011	287538.4204	3841603.75	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G3-65
F5D6G3-126	F5D6G3	7.27159666	1/31/2011	287515.7387	3841623.091	Cultural Debris	Scrap	N/A	N/A	N/A	2	10	0.1	Scrap Bin	None	Wire,screw
F5D6G3-127	F5D6G3	7.193617458	2/3/2011	287513.4	3841631.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	30	Scrap Bin	None	Metal cable, shackle BHA
F5D6G3-128	F5D6G3	7.090342617	1/27/2011	287529.1853	3841612.522	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	1.5	Scrap Bin	None	Lug wrench
F5D6G3-129	F5D6G3	6.953269478	1/27/2011	287506.8646	3841609.774	Cultural Debris	Scrap	N/A	N/A	N/A	5	6	0.3	Scrap Bin	None	4- wire, alum bracket
F5D6G3-130	F5D6G3	6.817893504	1/27/2011	287515	3841608.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	4	Scrap Bin	None	Cast pipe
F5D6G3-131	F5D6G3	6.802529816	1/31/2011	287509.9207	3841626.638	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	3	Scrap Bin	None	Metal plate
F5D6G3-132	F5D6G3	6.398572549	1/31/2011	287505.6177	3841641.779	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.2	Scrap Bin	None	Sheet metal
F5D6G3-133	F5D6G3	6.236693801	1/27/2011	287529.6816	3841601.372	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Heavy wire
F5D6G3-134	F5D6G3	6.178710994	1/27/2011	287516.3712	3841606.655	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	2	Scrap Bin	None	Cast pipe
F5D6G3-135	F5D6G3	6.168269632	1/27/2011	287505.4	3841609.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	0.5	Scrap Bin	None	Metal bracket, wire
F5D6G3-136	F5D6G3	6.165772099	1/31/2011	287511.3506	3841623.731	Cultural Debris	Scrap	N/A	N/A	N/A	3	9	0.5	Scrap Bin	None	Bolt,washer,wire
F5D6G3-137	F5D6G3	6.033999282	1/31/2011	287510.7147	3841631.06	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	6	Scrap Bin	None	Rebar, pipe
F5D6G3-138	F5D6G3	5.906584835	1/27/2011	287534.5562	3841608.611	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.1	Scrap Bin	None	Heavy wire, comm wire
F5D6G3-139	F5D6G3	5.856163439	1/31/2011	287508.5706	3841620.737	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	1	Scrap Bin	None	Rebar, wire
F5D6G3-140	F5D6G3	5.647338331	1/27/2011	287528.5621	3841615.287	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.3	Scrap Bin	None	Heavy wire
F5D6G3-141	F5D6G3	5.644904237	1/27/2011	287518.7721	3841607.005	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G3-52
F5D6G3-142	F5D6G3	5.449385317	1/31/2011	287501.7071	3841636.008	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G3-91
F5D6G3-143	F5D6G3	5.344092728	2/3/2011	287511.4965	3841632.692	Cultural Debris	Scrap	N/A	N/A	N/A	2	36	5	Scrap Bin	None	Cast pipe, nut BHA
F5D6G3-144	F5D6G3	5.211217597	1/27/2011	287537.0081	3841607.56	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Alum can
F5D6G3-145	F5D6G3	5.129348277	1/27/2011	287540.8	3841609	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	5	Scrap Bin	None	Reinf conc.
F5D6G3-146	F5D6G3	4.686075685	1/27/2011	287538.6	3841600.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Heavy wire
F5D6G3-147	F5D6G3	4.649900912	1/27/2011	287549.2	3841601	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.2	Scrap Bin	None	Rebar, comm wire

Anomaly ID	Grid	Amplitude	Dlg Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6G3-148	F5D6G3	4.522255685	2/1/2011	287504.8413	3841612.114	Cultural Debris	Scrap	N/A	N/A	N/A	3	7	1	Scrap Bin	None	Metal handle, rebar, reinf conc
F5D6G3-149	F5D6G3	4.499592919	1/28/2011	287520.9539	3841628.226	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.2	Scrap Bin	None	Heavy wire
F5D6G3-150	F5D6G3	4.424344211	1/27/2011	287533.7568	3841613.952	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.2	Scrap Bin	None	Heavy wire
F5D6G3-151	F5D6G3	4.424207886	2/3/2011	287503.2445	3841623.56	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	5	Scrap Bin	None	Chicken coop wiire BHA
F5D6G3-152	F5D6G3	4.223138809	1/27/2011	287526.8	3841605.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	2	Scrap Bin	None	Cellinoid
F5D6G3-153	F5D6G3	4.218782099	2/3/2011	287512.6755	3841639.177	SHD	TBD	Shared	N/A	N/A	0	0	0	Left in Place	None	Shd w/G3-14.
F5D6G3-154	F5D6G3	4.049611186	1/27/2011	287515.953	3841619.425	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.2	Scrap Bin	None	Razor wire
F5D6G3-155	F5D6G3	3.932944535	1/31/2011	287503.8	3841615.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	0.5	Scrap Bin	None	Wire cast pipe
F5D6G3-156	F5D6G3	3.866180405	1/27/2011	287536.8745	3841608.856	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	0.5	Scrap Bin	None	Metal bar
F5D6G3-157	F5D6G3	3.865783689	1/31/2011	287510.8	3841622.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	Lrg nail
F5D6G3-158	F5D6G3	3.815448027	1/31/2011	287515.5443	3841626.757	Cultural Debris	Scrap	N/A	N/A	N/A	4	8	0.3	Scrap Bin	None	Wire,3-nails
F5D6G3-159	F5D6G3	3.748286202	1/27/2011	287508.8515	3841606.06	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	45	Scrap Bin	None	Wire, reinf conc.
F5D6G3-160	F5D6G3	3.699269929	1/31/2011	287504.7064	3841616.25	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	Wire
F5D6G3-161	F5D6G3	3.632240247	1/27/2011	287522.6101	3841618.098	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/G3-96
F5D6G3-162	F5D6G3	3.618763841	2/14/2011	287507.2	3841641.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.5	Scrap Bin	None	Heavy wire BHA
F5D6G3-163	F5D6G3	3.294641365	2/3/2011	287520.5744	3841619.09	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	2	Scrap Bin	None	Heavy rebar, BHA
F5D6G3-164	F5D6G3	3.264995574	1/28/2011	287506.6	3841612.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	Wire
F5D6G3-165	F5D6G3	3.243772011	1/28/2011	287524.6869	3841616.673	Cultural Debris	Scrap	N/A	N/A	N/A	1	30	1	Scrap Bin	None	Rebar BHA
F5D6G3-166	F5D6G3	3.215777174	1/27/2011	287514.9903	3841613.532	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.2	Scrap Bin	None	Heavy metal pin
F5D6G3-167	F5D6G3	3.187880038	1/27/2011	287523.8	3841606.4	Cultural Debris	Scrap	N/A	N/A	N/A	3	5	1	Scrap Bin	None	Rebar, wire, lighter
F5D6G3-168	F5D6G3	3.165349482	1/27/2011	287510.4	3841615.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.2	Scrap Bin	None	Heavy wire
F5D6G3-169	F5D6G3	3.159798163	1/27/2011	287533.625	3841611.724	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.5	Scrap Bin	None	Small shaft
F5D6G3-170	F5D6G3	3.133561609	1/27/2011	287529.6	3841621.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	Wire
F5D6G3-171	F5D6G3	3.082529544	1/27/2011	287510.4	3841613.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.2	Scrap Bin	None	Heavy wire
F5D6G3-172	F5D6G3	3.05941057	2/1/2011	287509	3841611.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	22	1	Scrap Bin	None	Rebar
F5D6G3-173	F5D6G3	3.048625625	1/31/2011	287500.2	3841638.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	5	Scrap Bin	None	Pipe
F5D6G3-174	F5D6G3		2/22/2011	287500	3841631.371	Cultural Debris	Scrap	N/A	N/A	N/A	300	24	500	Scrap Bin	None	Eng stakes, lrg pieces cast pipe, wd debris w/nails, razor/barb wire, chickenfence wire,re-inf concrete, ASA G3-01, MAG/DIG POLY BHA.
			3/2/2011													Expnded ARTY PRIMERS ASA G3-02 MAG/DIG POLY
			3/7/2011													see additional items also.
F5D6G3-176	F5D6G3			287500	3841600	Cultural Debris	Scrap	N/A	N/A	N/A	125	24	450	Scrap Bin	None	8- reinf concrete, 30-cast pipe, 25-rebar, 60-reinf wire, ASA G3-03 MAG/DIG sarded 030211 1430, completed 030711
F5D6G4-001	F5D6G4	15.27828979	12/10/2010	287500.4	3841651.4	RRD	Scrap	N/A	N/A	N/A	2	4	2	Scrap Bin	None	1300.
F5D6G4-002	F5D6G4	9.569266555	12/10/2010	287501.0586	3841650.677	RRD	Scrap	N/A	N/A	N/A	1	1	0.1	Scrap Bin	None	Metal stake and comm wire
F5D6G4-003	F5D6G4	11.08572864	12/10/2010	287500.4	3841650	RRD	Scrap	N/A	N/A	N/A	1	1	0.1	Scrap Bin	None	Comm wire
F5D6H2-001	F5D6H2	2371.047026	1/25/2011	287553.2315	3841587.415	Cultural Debris	Scrap	N/A	N/A	N/A	2	1	20	Scrap Bin	None	Comm wire
F5D6H2-002	F5D6H2	1649.749756	1/25/2011	287564.2	3841575.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	1	20	Scrap Bin	None	Eng stks
F5D6H2-003	F5D6H2	1292.45418	1/25/2011	287567.4475	3841577.394	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	8	Scrap Bin	None	Eng stks
F5D6H2-004	F5D6H2	1290.55542	1/28/2011	287561	3841586	Cultural Debris	Scrap	N/A	N/A	N/A	8	30	400	Scrap Bin	None	Eng stk
F5D6H2-005	F5D6H2	995.4675903	1/25/2011	287566.2	3841574	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Reinf conc colvert BHA
F5D6H2-006	F5D6H2	655.1453246	1/28/2011	287559.8	3841587.4	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/H2-002
F5D6H2-007	F5D6H2	464.4780631	1/25/2011	287554.7748	3841573.503	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	20	Scrap Bin	None	Shd w/ H2-04 BHA
F5D6H2-008	F5D6H2	377.7161858	1/28/2011	287563.8391	3841584.394	Cultural Debris	Scrap	N/A	N/A	N/A	3	36	200	Scrap Bin	None	Cast pipe
F5D6H2-009	F5D6H2	268.9504089	1/28/2011	287559.2	3841586	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Reinf conc colvert BHA
F5D6H2-010	F5D6H2	251.5947417	1/28/2011	287562.6	3841585.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ H2-04
F5D6H2-011	F5D6H2	168.1317902	1/25/2011	287562.2	3841580	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	50	Scrap Bin	None	Shd w/ H2-08 BHA
F5D6H2-012	F5D6H2	141.8659972	1/27/2011	287558.8	3841589.8	Cultural Debris	Scrap	N/A	N/A	N/A	3	4	28	Scrap Bin	None	Reinf conc, wire
F5D6H2-013	F5D6H2	135.5067444	1/25/2011	287567.6	3841581.4	Cultural Debris	Scrap	N/A	N/A	N/A	24	6	100	Scrap Bin	None	2-reinf conc, rebar
F5D6H2-014	F5D6H2	132.3026255	1/25/2011	287567.3823	3841578.698	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	4- reinf conc, 20-nails
F5D6H2-015	F5D6H2	127.8597641	1/25/2011	287569.4	3841577	Cultural Debris	Scrap	N/A	N/A	N/A	3	4	3	Scrap Bin	None	Shd w/H2-013
F5D6H2-016	F5D6H2	120.7740326	1/27/2011	287557	3841584.6	Cultural Debris	Scrap	N/A	N/A	N/A	4	6	100	Scrap Bin	None	Nail, wire, rebar
F5D6H2-017	F5D6H2	116.1700373	1/25/2011	287559.7678	3841569.597	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	1	Scrap Bin	None	Reinf concrete
F5D6H2-018	F5D6H2	107.2179489	1/25/2011	287568.4	3841580.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Rebar, wire
F5D6H2-019	F5D6H2	92.94239806	1/28/2011	287569.6	3841578.4	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/H2-013
F5D6H2-020	F5D6H2	77.42747495	1/28/2011	287561.8	3841582.2	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Previously dug
F5D6H2-021	F5D6H2	75.05564631	1/25/2011	287551.7588	3841559.182	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	1	Scrap Bin	None	Shd w/ H2-08 BHA
F5D6H2-022	F5D6H2	74.66973443	1/25/2011	287566.5345	3841580.264	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Rebar, wire
F5D6H2-023	F5D6H2	62.92820735	1/25/2011	287553.2	3841559.8	Cultural Debris	Scrap	N/A	N/A	N/A	4	2	0.2	Scrap Bin	None	Shd w/H2-013
F5D6H2-024	F5D6H2	56.75370026	1/25/2011	287551.2	3841562	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	1	Scrap Bin	None	3-nails, comm wire
F5D6H2-025	F5D6H2	55.82245592	1/27/2011	287558.1758	3841583.716	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Rebar
F5D6H2-026	F5D6H2	53.41258224	1/25/2011	287551.9092	3841561.231	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	1	Scrap Bin	None	Shd w/ H2-16
F5D6H2-027	F5D6H2	42.60368347	1/27/2011	287558.8	3841580	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	Rebar
F5D6H2-028	F5D6H2	34.50912857	1/25/2011	287561.8	3841578.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	0.1	Scrap Bin	None	Heavy wire
F5D6H2-029	F5D6H2	34.02777587	1/28/2011	287563.9	3841583	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	60	Scrap Bin	None	Wire, nail
F5D6H2-030	F5D6H2	32.99761651	1/25/2011	287553.0141	3841573.808	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	1	Scrap Bin	None	Reinf conc BHA
F5D6H2-031	F5D6H2	32.29252393	1/27/2011	287558.6195	3841582.273	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	55	Scrap Bin	None	Tail pipe
F5D6H2-032	F5D6H2	26.28916137	1/25/2011	287563.1218	3841578.568	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	10	Scrap Bin	None	Reinf conc, U-bolt
F5D6H2-033	F5D6H2	25.14255524	1/27/2011	287557.4	3841586	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	1	Scrap Bin	None	Reinf conc, wire
F5D6H2-034	F5D6H2	15.39447975	1/27/2011	287562	3841588.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	1	Scrap Bin	None	Rebar, nail
F5D6H2-035	F5D6H2	13.56658146	1/28/2011	287564.26	3841586.75	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	110	Scrap Bin	None	Rebar
																Reinf conc w/20 ft rebar BHA

Anomaly ID	Grid	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (Inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
F5D6H2-036	F5D6H2	12.95132954	1/25/2011	287550.7436	3841557.452	Cultural Debris	Scrap	N/A	N/A	N/A	3	4	1	Scrap Bin	None	Rebar, 2-wire
F5D6H2-037	F5D6H2	12.42195606	1/25/2011	287555.6	3841576.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	5	Scrap Bin	None	Reinf conc
F5D6H2-038	F5D6H2	8.755953786	1/25/2011	287561.6	3841576.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.2	Scrap Bin	None	Lrg nail
F5D6H2-039	F5D6H2	8.484659189	1/28/2011	287560.4	3841583.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/H2-04 BHA
F5D6H2-040	F5D6H2	8.432121277	1/25/2011	287552.2	3841583	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.1	Scrap Bin	None	Heavy wire
F5D6H2-041	F5D6H2	6.937222954	1/27/2011	287559.6	3841580.8	SHD	Shared Target	Shared	N/A	N/A	0	0	0	Scrap Bin	None	Shd w/ H2-31
F5D6H2-042	F5D6H2	6.93023586	1/25/2011	287565	3841577.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	2	Scrap Bin	None	Rebar, wire
F5D6H2-043	F5D6H2	6.187846127	1/25/2011	287550.1822	3841572.464	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	1	Scrap Bin	None	Lrg bolt
F5D6H2-044	F5D6H2	4.554043768	1/25/2011	287553.4	3841571.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.1	Scrap Bin	None	Spring
F5D6H2-045	F5D6H2	4.374493069	1/25/2011	287556.5118	3841581.416	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	0.2	Scrap Bin	None	Wire, metal tab
F5D6H2-046	F5D6H2	4.017518867	1/25/2011	287561.6102	3841573.996	MPPEH	Flare	M127A1, Star Parachute	Empty	ier (See Commer	1	2	0.5	Consolidation Point	None	Exp grnd signal flare
F5D6H2-047	F5D6H2	3.067439318	1/25/2011	287559.2	3841577	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.5	Scrap Bin	None	Bolt
F5D6H2-048	F5D6H2	3	1/25/2011	287557.4	3841579.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	Lrg nail.
F5D6H2-049	F5D6H2	999	2/9/2011	287549.9984	3841586.184	Cultural Debris	Scrap	N/A	N/A	N/A	61	24	1500	Scrap Bin	None	60- reinf concrete, 1-rebar EXA

¹ Coordinates in the UTM Grid System, NAD83

Anomaly ID	Transect	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
T01-00001	T01	6.5	4/19/2011	287659.8	3841486.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.5		None	2" dia 1/4"thick metal disk
T02-00001	T02	3.4	4/19/2011	287659.4	3841582.1	MPPEH	Misc	Other (see comments)	N/A	N/A	1	3	0.1		None	223 Blank (Negative with
T04-00001	T04	124	4/19/2011	287636.5	3841556.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	5		None	Schonstedt, found with white)
T05-00001	T05	3.3	4/19/2011	287622.5	3841476.4	No Contact	No Contact	N/A	N/A	N/A	0	0	0		None	water pump
			4/19/2011													No Contact with Schonstedt and White
T05-00002	T05	30		287628.2	3841592.3	Cultural Debris	Scrap	N/A	N/A	N/A	15	60	160		None	4 thin sheet metal
T06-00001	T06	246.9	4/19/2011	287613.1	3841482.1	MPPEH	Misc	Other (see comments)	Other (see comments)	Other (see comments)	1	0	0.25			4 heavy pipe
T06-00002	T06	18	4/19/2011	287613.2	3841490.6	Cultural Debris	Scrap	N/A	N/A	N/A	3	3	0.1		None	Sq metal brace
			4/19/2011													6 small metal wire
T06-00003	T06	5.5		287614.7	3841531.5	Cultural Debris	Scrap	N/A	N/A	N/A	5	8	88		None	Trash pit, unable to clear.
T06-00004	T06	281.9		287618.9	3841588.1	Cultural Debris	Scrap	N/A	N/A	N/A	3	24	30		None	Hole Depth to 60"
T07-00001	T07	1712.1	4/19/2011	287609.3	3841625.3	Cultural Debris	Scrap	N/A	N/A	N/A	10	12	500		None	Expended smoke grenade
T09-00005	T09	172.1	4/19/2011	287594.8	3841589.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	2000		None	2x 6-8" reinforced wire
			4/19/2011													1x2" wire
T09-00006	T09	1663		287598.1	3841618.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	700		None	dense metal 2x2
T09-00007	T09	4.7	4/19/2011	287599.5	3841642.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1		None	2x8"pipes
T103-00001	T103	7.4	4/19/2011	287642.1	3841454.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1		None	2x6" barbwire banding
T107-00001	T107	148.3	4/19/2011	287605.5	3841544.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	10	2		None	6' long 2" pipe
			4/19/2011													4' long small pipe,
T107-00002	T107	638.2		287607.6	3841570.1	Cultural Debris	Scrap	N/A	N/A	N/A	4	18	1500		None	RC
T107-00003	T107	254.8	4/19/2011	287609.1	3841583	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	500		None	metal track
T25-00001	T25	4	4/19/2011	287439.3	3841506.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1		None	Pit of RC
T09-00001	T09	6.9	4/20/2011	287582.5	3841439.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	0	0.1			8" piece of barbwire
T09-00002	T09	889.2	4/20/2011	287583.5	3841460.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	500		None	18" wire
			4/20/2011													6" wire
T09-00003	T09	481.3		287588	3841488.5	Cultural Debris	Scrap	N/A	N/A	N/A	3	18	5		None	RC
T09-00004	T09	44.5	4/20/2011	287592.2	3841546	Cultural Debris	Scrap	N/A	N/A	N/A	2	10	50		None	2 engineering stakes
T10-00001	T10	214.9	4/20/2011	287579.9	3841523	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	500		None	24"
T11-00001	T11	78.4	4/20/2011	287565.9	3841464.3	Cultural Debris	Scrap	N/A	N/A	N/A	3	10	2		None	small pipe 6"
			4/20/2011													pieces of dense metal
T11-00002	T11	734.3		287569.6	3841518.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	50		None	18" of twisted up wire
T12-00001	T12	77.9	4/20/2011	287558.3	3841472.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	10		None	3 x 8" wire fence
T14-00002	T14	3.5	4/20/2011	287553.6	3841489.5	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.1		None	MRE wrapper
			4/20/2011													9 5.56 links
T15-00001	T15	265.5		287539.6	3841445	Cultural Debris	Scrap	N/A	N/A	N/A	6	7	20		None	7.62 case
T16-00001	T16	42	4/20/2011	287529	3841438	Cultural Debris	Scrap	N/A	N/A	N/A	4	4	5		None	bucket handle
T16-00002	T16	17.9	4/20/2011	287529.7	3841482.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1		None	com wire
T18-00001	T18	46.9	4/20/2011	287504.4	3841415.3	Cultural Debris	Scrap	N/A	N/A	N/A	3	8	0.1		None	3' engineer stake
			4/20/2011													cans and MRE wrappers
T19-00001	T19	4		287492.4	3841443.2	Cultural Debris	Scrap	N/A	N/A	N/A	11	8	0.2		None	Drum lid clamp
T19-00002	T19	16.4	4/20/2011	287504.8	3841503.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.1			6" com wire
T20-00001	T20	25.2	4/20/2011	287482.2	3841461.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	2			metal bracket
T20-00002	T20	3.6	4/20/2011	287491	3841493.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	0.1			2 small RC
T21-00001	T21	21.3	4/20/2011	287475.6	3841427.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.1		None	Nail, wire large aluminum
T21-00002	T21	7.1	4/20/2011	287484.7	3841508.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.1		None	drink can
T22-00001	T22	7.9	4/20/2011	287469.7	3841485	Cultural Debris	Scrap	N/A	N/A	N/A	3	8	1			
T23-00001	T23	51.5	4/20/2011	287462.8	3841483.4	Cultural Debris	Scrap	N/A	N/A	N/A	3	8	1		None	

Anomaly ID	Transect	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
T24-00002	T24	6.9	4/20/2011	287449.3	3841472.3	Cultural Debris	Scrap	N/A	N/A	N/A	4	8	0.2		None	ammo box clips, small wire, 2 5.56 expended blanks
T24-00003	T24	23.2	4/20/2011	287448.8	3841532.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	48	50		None	15' long 4" dia pipe
T26-00001	T26	6.3	4/20/2011	287427.9	3841475.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	7	0.1		None	15' long 2" dia ppipe 8" pieces of fence wire
T26-00002	T26	3.3	4/20/2011	287428.7	3841521.9	Cultural Debris	Scrap	N/A	N/A	N/A	4	3	0.1			3 nails
T27-00001	T27	17	4/20/2011	287419	3841443.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1		None	4" piece of barb wire bracket
T27-00002	T27	1634.3	4/20/2011	287418.1	3841528.8	Cultural Debris	Scrap	N/A	N/A	N/A	5	60	50		None	2 engineering stakes assorted 55 gallon drum pieces
T28-00001	T28	4.9	4/20/2011	287414.4	3841472.3	Cultural Debris	Scrap	N/A	N/A	N/A	5	8	0.1		None	1 safty razor 4x 7.62 expended blank cartridges.
T28-00002	T28	443.9	4/20/2011	287410.6	3841511.8	Cultural Debris	Scrap	N/A	N/A	N/A	3	0	10			2 eengineering stakes 6 inch of barb wire
T29-00001	T29	3530.9	4/20/2011	287404.3	3841483.5	Cultural Debris	Scrap	N/A	N/A	N/A	5	4	20		None	7" piece of concertina wire 4 engineering stakes
T29-00002	T29	15.3	4/20/2011	287403.5	3841537.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.1		None	lug nut
T30-00001	T30	13.8	4/20/2011	287389.8	3841579.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	0.1			tent stake 3' pices of pike
T44-00002	T44	62.5	4/20/2011	287537.1	3841656.3	Cultural Debris	Scrap	N/A	N/A	N/A	4	10	3			8" pin screw driver
T10-00002	T10	232.3	4/21/2011	287585.5	3841590.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	2000		None	rotating band cover RC pit opened to 5x6x1'
T11-00003	T11	552.4	4/21/2011	287575.9	3841581.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1000		None	CR pit opend to 5x9x2'
T11-00004	T11	142.8	4/21/2011	287580.4	3841625.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1000			Huge RC slab Aluminum speedometer dial
T117-00001	T117	33.8	4/21/2011	287524.7	3841502.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1		None	Trash pit 17 pieces of steel
T117-00002	T117	1469.2	4/21/2011	287529.4	3841520.6	Cultural Debris	Scrap	N/A	N/A	N/A	24	36	1000		None	7 RC
T118-00001	T118	43.1	4/21/2011	287517	3841515	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	5		None	frame for a jeep seat
T12-00002	T12	15.6	4/21/2011	287561.1	3841533.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	5		None	6"x8" metal bracket
T12-00003	T12	4.6	4/21/2011	287564	3841569	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	2		None	Small RC
T12-00004	T12	375.5	4/21/2011	287573.3	3841653.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	1200		None	12"+ of tank track 15'x9'x3' trash pit RC,
T13-00001	T13	4857.3	4/21/2011	287558.9	3841619.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	600		None	engineering stakes, ect 556 link dump pit
T14-00001	T14	5.8	4/21/2011	287548.4	3841443.1	MDAS	Misc	er (see comme	N/A	N/A	2000	2	50		None	24"x30"x2"
T15-00002	T15	3.7	4/21/2011	287548.4	3841520.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	2		None	small leaf spring 6" 4" metal bracket and 6" barbwire
T16-00003	T16	6.4	4/21/2011	287541.2	3841541.3	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	1			
T24-00001	T24	65.1	4/21/2011	287449	3841435.7	Cultural Debris	Scrap	N/A	N/A	N/A	8	2	5		None	Actual location should be T11-21 with mV of 761.7 engineering stack 7 strands of barbwire com wire
T34-00001	T34	3.3	4/21/2011	287418.8	3841622.8	Cultural Debris	Scrap	N/A	N/A	N/A	3	6	0.1		None	can lid MRE wrapper
T40-00001	T40	15.8	4/21/2011	287481.4	3841672.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1		None	locking pin
T43-00001	T43	4756.3	4/21/2011	287513.7	3841648.1	Cultural Debris	Scrap	N/A	N/A	N/A	5	36	120			3 steel beam assorted metal pieces
T44-00001	T44	114.3	4/21/2011	287525.4	3841637.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	30		None	2' piece of metal fram 2'x2" solid bar stock 8' rebar
T45-00001	T45	890.6	4/21/2011	287554.7	3841657.4	Cultural Debris	Scrap	N/A	N/A	N/A	6	24	4100			2x cast pipes 2x 2" bar stock pieces 12' sttel frame RC slab
UXO17_T01-00003	UXO17_T01	38.8	8/3/2011	287672.3	3841526.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	30	Scrap Bin	None	OER team members not loaded on pda.
UXO17_T01-00004	UXO17_T01	5.8	8/3/2011	287672.7	3841528	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	60	Scrap Bin	None	
UXO17_T01-00005	UXO17_T01	12034.7	8/3/2011	287674.3	3841547.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	600	Scrap Bin	None	
UXO17_T01-00006	UXO17_T01	3.3	8/3/2011	287673.9	3841551.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	
UXO17_T02-00001	UXO17_T02	5.6	8/3/2011	287660.9	3841549.8	Cultural Debris	Scrap	N/A	N/A	N/A	3	2	0.01	Scrap Bin	None	
UXO17_T02-00002	UXO17_T02	4.3	8/3/2011	287660.7	3841553.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	20	Scrap Bin	None	Monitoring well
UXO17_T02-00003	UXO17_T02	3.6	8/3/2011	287660.3	3841560.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.02	Scrap Bin	None	
UXO17_T02-00004	UXO17_T02	3.1	8/3/2011	287659.7	3841572.6	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	
UXO17_T03-00001	UXO17_T03	48.4	8/3/2011	287651.5	3841545.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.01	Scrap Bin	None	
UXO17_T03-00002	UXO17_T03	3.1	8/3/2011	287647.6	3841573.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	
UXO17_T03-00003	UXO17_T03	3.3	8/3/2011	287647.5	3841577.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	

Anomaly ID	Transect	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
UXO17_T03-00004	UXO17_T03	3.5	8/3/2011	287647.4	3841580.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	
UXO17_T03-00005	UXO17_T03	3.4	8/3/2011	287647.4	3841590	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.2	Scrap Bin	None	
UXO17_T04-00001	UXO17_T04	181.1	8/3/2011	287635.2	3841539.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	50	Scrap Bin	None	
UXO17_T04-00002	UXO17_T04	17.9	8/3/2011	287635.4	3841542.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	30	Scrap Bin	None	
UXO17_T04-00003	UXO17_T04	7.3	8/3/2011	287635.6	3841547.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.01	Scrap Bin	None	
UXO17_T04-00004	UXO17_T04	31.2	8/3/2011	287635.7	3841550.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	1	Scrap Bin	None	
UXO17_T04-00006	UXO17_T04	42.5	8/3/2011	287637.4	3841564.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.01	Scrap Bin	None	Control point
UXO17_T04-00007	UXO17_T04	3.4	8/3/2011	287636.8	3841571.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.2	Scrap Bin	None	
UXO17_T04-00008	UXO17_T04	2957.6	8/3/2011	287637.6	3841595.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	5	Scrap Bin	None	
UXO17_T04-00009	UXO17_T04	28.8	8/3/2011	287639.8	3841607.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	5	Scrap Bin	None	
UXO17_T04-00010	UXO17_T04	4.6	8/3/2011	287642.2	3841618.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.02	Scrap Bin	None	
UXO17_T05-00001	UXO17_T05	12.4	8/3/2011	287621.7	3841449.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.3	Scrap Bin	None	
UXO17_T05-00002	UXO17_T05	3.3	8/3/2011	287621.7	3841451.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.02	Scrap Bin	None	
UXO17_T05-00003	UXO17_T05	3.2	8/3/2011	287621.9	3841459.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.02	Scrap Bin	None	
UXO17_T05-00004	UXO17_T05	3.5	8/3/2011	287622	3841464.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.02	Scrap Bin	None	
UXO17_T05-00006	UXO17_T05	73.8	8/3/2011	287622.6	3841478.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	20	0.03	Scrap Bin	None	
UXO17_T05-00007	UXO17_T05	3.1	8/3/2011	287622.7	3841481.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	0.3	Scrap Bin	None	
UXO17_T05-00008	UXO17_T05	263.1	8/3/2011	287622.6	3841488.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	6	Scrap Bin	None	
UXO17_T05-00009	UXO17_T05	45.9	8/3/2011	287621.7	3841502.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1	Scrap Bin	None	
UXO17_T05-00010	UXO17_T05	426.2	8/3/2011	287622.9	3841507.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	36	75	Scrap Bin	None	
UXO17_T05-00011	UXO17_T05	3132.3	8/3/2011	287624.1	3841513.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	10	Scrap Bin	None	
UXO17_T05-00012	UXO17_T05	15.7	8/3/2011	287624.9	3841517.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	5	Scrap Bin	None	
UXO17_T05-00013	UXO17_T05	8.8	8/3/2011	287625.7	3841522.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.05	Scrap Bin	None	
UXO17_T05-00014	UXO17_T05	16.6	8/3/2011	287626.1	3841526.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.01	Scrap Bin	None	
UXO17_T05-00015	UXO17_T05	112.2	8/3/2011	287627.4	3841545.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	2	Scrap Bin	None	
UXO17_T05-00016	UXO17_T05	5	8/3/2011	287627.6	3841550.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.03	Scrap Bin	None	
UXO17_T05-00017	UXO17_T05	11.6	8/3/2011	287627.7	3841553.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.02	Scrap Bin	None	
UXO17_T05-00018	UXO17_T05	28.8	8/3/2011	287627.8	3841556.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	10	Scrap Bin	None	
UXO17_T05-00019	UXO17_T05	981.9	8/3/2011	287628	3841560.8	Cultural Debris	Scrap	N/A	N/A	N/A	3	6	2	Scrap Bin	None	
UXO17_T05-00020	UXO17_T05	174.4	8/3/2011	287628.4	3841566.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	3	Scrap Bin	None	
UXO17_T05-00021	UXO17_T05	119.1	8/3/2011	287628.8	3841571.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	7	0.25	Scrap Bin	None	
UXO17_T05-00022	UXO17_T05	12.5	8/3/2011	287629.5	3841575.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	
UXO17_T05-00023	UXO17_T05	22.7	8/3/2011	287634.3	3841579.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	5	Scrap Bin	None	
UXO17_T05-00024	UXO17_T05	982.1	8/3/2011	287629.2	3841587.5	Cultural Debris	Scrap	N/A	N/A	N/A	2	10	35	Scrap Bin	None	
UXO17_T05-00026	UXO17_T05	209.8	8/3/2011	287627	3841598.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	20	50	Scrap Bin	None	
UXO17_T05-00027	UXO17_T05	18.4	8/3/2011	287628	3841604.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	5	Scrap Bin	None	
UXO17_T05-00028	UXO17_T05	4.1	8/3/2011	287629.3	3841608.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	
UXO17_T05-00029	UXO17_T05	14.7	8/3/2011	287630	3841610.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.3	Scrap Bin	None	
UXO17_T05-00030	UXO17_T05	12.2	8/3/2011	287631.4	3841617	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	
UXO17_T05-00031	UXO17_T05	53	8/3/2011	287631.2	3841620.7	Cultural Debris	Scrap	N/A	N/A	N/A	2	24	5	Scrap Bin	None	
UXO17_T06-00001	UXO17_T06	3.3	8/3/2011	287609.9	3841445.6	Cultural Debris	Scrap	N/A	N/A	N/A	0	0	0	Left in Place	None	
UXO17_T06-00002	UXO17_T06	36.7	8/3/2011	287611.2	3841454.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	
UXO17_T06-00003	UXO17_T06	5.9	8/3/2011	287612.5	3841466.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T06-00004	UXO17_T06	3.2	8/3/2011	287613	3841477.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T06-00006	UXO17_T06	220.3	8/3/2011	287613.1	3841486.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	30	Scrap Bin	None	
UXO17_T06-00008	UXO17_T06	116.2	8/3/2011	287613.2	3841494.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	1	Scrap Bin	None	
UXO17_T06-00009	UXO17_T06	4	8/3/2011	287613.2	3841498.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	1	Scrap Bin	None	
UXO17_T06-00010	UXO17_T06	15.1	8/3/2011	287613.3	3841503.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.5	Scrap Bin	None	
UXO17_T06-00011	UXO17_T06	11.4	8/3/2011	287613.6	3841517.7	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	2	Scrap Bin	None	
UXO17_T06-00012	UXO17_T06	29.6	8/3/2011	287613.8	3841520.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	1	Scrap Bin	None	
UXO17_T06-00013	UXO17_T06	286.9	8/3/2011	287614.5	3841529.3	Cultural Debris	Scrap	N/A	N/A	N/A	2	5	30	Scrap Bin	None	
UXO17_T06-00015	UXO17_T06	523.9	8/3/2011	287615	3841535.2	Cultural Debris	Scrap	N/A	N/A	N/A	10	5	10	Scrap Bin	None	Could not clear. Rust pieces.
UXO17_T06-00016	UXO17_T06	3	8/3/2011	287616.8	3841548.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T06-00017	UXO17_T06	241.9	8/3/2011	287617.5	3841553.3	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	35	Scrap Bin	None	
UXO17_T06-00018	UXO17_T06	45	8/3/2011	287618.3	3841559	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	6	Scrap Bin	None	
UXO17_T06-00019	UXO17_T06	135.8	8/3/2011	287618.7	3841562.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	500	Left in Place	None	
UXO17_T06-00020	UXO17_T06	17.5	8/3/2011	287619.3	3841567.1	Cultural Debris	Scrap	N/A	N/A	N/A	6	18	0.03	Scrap Bin	None	
UXO17_T06-00021	UXO17_T06	18.4	8/3/2011	287619.5	3841568.4	Cultural Debris	Scrap	N/A	N/A	N/A	4	18	200	Left in Place	None	
UXO17_T06-00022	UXO17_T06	472.6	8/3/2011	287620.2	3841573.9	Cultural Debris	Scrap	N/A	N/A	N/A	4	20	1000	Left in Place	None	
UXO17_T06-00023	UXO17_T06	453.3	8/3/2011	287619.5	3841581.3	Cultural Debris	Scrap	N/A	N/A	N/A	8	24	1000	Left in Place	None	
UXO17_T06-00025	UXO17_T06	21.4	8/3/2011	287618.4	3841593	Cultural Debris	Scrap	N/A	N/A	N/A	5	12	0.5	Left in Place	None	
UXO17_T06-00026	UXO17_T06	224.3	8/3/2011	287618	3841596.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	200	Scrap Bin	None	Control point
UXO17_T06-00027	UXO17_T06	458.7	8/3/2011	287617.5	3841600.6	Cultural Debris	Scrap	N/A	N/A	N/A	6	12	1000	Left in Place	None	
UXO17_T06-00028	UXO17_T06	131	8/3/2011	287619.4	3841605.1	Cultural Debris	Scrap	N/A	N/A	N/A	4	12	300	Left in Place	None	
UXO17_T06-00029	UXO17_T06	52.9	8/3/2011	287620.9	3841612.2	Cultural Debris	Scrap	N/A	N/A	N/A	6	5	200	Left in Place	None	
UXO17_T06-00030	UXO17_T06	294.4	8/3/2011	287621.2	3841616.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	300	Left in Place	None	
UXO17_T06-00031	UXO17_T06	110	8/3/2011	287621.6	3841620.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	100	Left in Place	None	
UXO17_T06-00032	UXO17_T06	4603.2	8/3/2011	287621.9	3841624.6	Cultural Debris	Scrap	N/A	N/A	N/A	10	5	1000	Left in Place	None	
UXO17_T07-00001	UXO17_T07	333.5	8/3/2011	287607.7	3841621.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	150	Scrap Bin	None	
UXO17_T07-00003	UXO17_T07	300.5	8/3/2011	287611.1	3841629.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	300	Left in Place	None	
UXO17_T08-00001	UXO17_T08	22.8	8/3/2011	287598.8	3841482.9	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	2	Scrap Bin	None	
UXO17_T08-00002	UXO17_T08	517.1	8/3/2011	287598.8	3841519.8	Cultural Debris	Scrap	N/A	N/A	N/A	4	4	2.5	Scrap Bin	None	
UXO17_T08-00003	UXO17_T08	24.1	8/3/2011	287598.8	3841526	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	2	Scrap Bin	None	
UXO17_T08-00004	UXO17_T08	16.3	8/3/2011	287598.8	3841529.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	5	Scrap Bin	None	

Anomaly ID	Transect	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
UXO17_T08-00005	UXO17_T08	154.1	8/3/2011	287598.8	3841534.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	10	Scrap Bin	None	
UXO17_T08-00006	UXO17_T08	97.5	8/3/2011	287598.8	3841536.8	Cultural Debris	Scrap	N/A	N/A	N/A	3	3	1	Scrap Bin	None	
UXO17_T08-00007	UXO17_T08	36.1	8/3/2011	287598.8	3841539.4	Cultural Debris	Scrap	N/A	N/A	N/A	3	5	50	Scrap Bin	None	
UXO17_T08-00008	UXO17_T08	33.9	8/3/2011	287598.8	3841542.2	Cultural Debris	Scrap	N/A	N/A	N/A	4	5	50	Scrap Bin	None	
UXO17_T09-00002	UXO17_T09	158.4	8/3/2011	287582.5	3841442.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	5	Scrap Bin	None	
UXO17_T09-00003	UXO17_T09	4.7	8/3/2011	287582.7	3841449.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.01	Scrap Bin	None	
UXO17_T09-00004	UXO17_T09	4442.9	8/3/2011	287583	3841457.4	Cultural Debris	Scrap	N/A	N/A	N/A	3	12	1000	Scrap Bin	None	
UXO17_T09-00006	UXO17_T09	200.9	8/3/2011	287584	3841463.1	Cultural Debris	Scrap	N/A	N/A	N/A	8	18	1000	Scrap Bin	None	
UXO17_T09-00007	UXO17_T09	37.1	8/3/2011	287584.6	3841466.4	Cultural Debris	Scrap	N/A	N/A	N/A	4	6	50	Scrap Bin	None	
UXO17_T09-00008	UXO17_T09	5.7	8/3/2011	287584.9	3841468.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.01	Scrap Bin	None	
UXO17_T09-00009	UXO17_T09	65.5	8/3/2011	287586	3841475.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	5	Scrap Bin	None	
UXO17_T09-00010	UXO17_T09	5.5	8/3/2011	287587.2	3841483.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.5	Scrap Bin	None	
UXO17_T09-00012	UXO17_T09	426.6	8/3/2011	287588.5	3841491.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	5	Scrap Bin	None	
UXO17_T09-00013	UXO17_T09	3.7	8/3/2011	287589.1	3841495.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T09-00014	UXO17_T09	3.5	8/3/2011	287589.5	3841497.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T09-00015	UXO17_T09	3.8	8/3/2011	287590	3841503.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T09-00016	UXO17_T09	5.4	8/3/2011	287590	3841505.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T09-00017	UXO17_T09	32.5	8/3/2011	287590	3841510	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.01	Scrap Bin	None	Control point
UXO17_T09-00018	UXO17_T09	3	8/3/2011	287591.6	3841532.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T09-00019	UXO17_T09	14.6	8/3/2011	287592.1	3841539	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.25	Scrap Bin	None	
UXO17_T09-00020	UXO17_T09	131.3	8/3/2011	287592.2	3841544	Cultural Debris	Scrap	N/A	N/A	N/A	7	2	1	Scrap Bin	None	
UXO17_T09-00022	UXO17_T09	7122.7	8/3/2011	287592.3	3841550.8	Cultural Debris	Scrap	N/A	N/A	N/A	4	6	40	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T09-00023	UXO17_T09	607.4	8/3/2011	287592.3	3841555.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	500	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T09-00024	UXO17_T09	34.4	8/3/2011	287592.3	3841558.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	2	Scrap Bin	None	
UXO17_T09-00025	UXO17_T09	71.4	8/3/2011	287592.6	3841561.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	5	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T09-00026	UXO17_T09	646.9	8/3/2011	287592.9	3841567	Cultural Debris	Scrap	N/A	N/A	N/A	2	10	1000	Left in Place	None	
UXO17_T09-00027	UXO17_T09	100.4	8/3/2011	287593.4	3841574.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1000	Left in Place	None	
UXO17_T09-00028	UXO17_T09	266.5	8/3/2011	287593.7	3841578.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	1000	Left in Place	None	
UXO17_T09-00029	UXO17_T09	104.2	8/3/2011	287594.1	3841581.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	1000	Left in Place	None	
UXO17_T09-00030	UXO17_T09	22.5	8/3/2011	287594.5	3841586	Cultural Debris	Scrap	N/A	N/A	N/A	5	12	30	Scrap Bin	None	
UXO17_T09-00032	UXO17_T09	336.3	8/3/2011	287595.3	3841594.2	Cultural Debris	Scrap	N/A	N/A	N/A	10	18	1000	Left in Place	None	
UXO17_T09-00033	UXO17_T09	73.1	8/3/2011	287596.2	3841600.1	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	1000	Left in Place	None	
UXO17_T09-00034	UXO17_T09	4.2	8/3/2011	287596.8	3841605.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.01	Scrap Bin	None	
UXO17_T09-00035	UXO17_T09	25.7	8/3/2011	287597.2	3841607.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	1	Scrap Bin	None	
UXO17_T09-00036	UXO17_T09	150.2	8/3/2011	287597.8	3841613.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	25	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T09-00038	UXO17_T09	859.1	8/3/2011	287598.5	3841625.2	Cultural Debris	Scrap	N/A	N/A	N/A	4	2	200	Left in Place	None	
UXO17_T09-00039	UXO17_T09	234.8	8/3/2011	287598.8	3841629.9	Cultural Debris	Scrap	N/A	N/A	N/A	6	2	500	Left in Place	None	
UXO17_T09-00040	UXO17_T09	3.6	8/3/2011	287599.1	3841636.2	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	
UXO17_T10-00001	UXO17_T10	3.5	8/3/2011	287575.5	3841454.8	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	
UXO17_T10-00002	UXO17_T10	77.9	8/3/2011	287576.4	3841464.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	3	Scrap Bin	None	
UXO17_T10-00004	UXO17_T10	12.3	8/3/2011	287577.4	3841475.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.02	Scrap Bin	None	
UXO17_T10-00005	UXO17_T10	4	8/3/2011	287578.1	3841489.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T10-00006	UXO17_T10	5.7	8/3/2011	287578.7	3841497.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T10-00021	UXO17_T10	241.6	8/3/2011	287585.9	3841595.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1000	Left in Place	None	
UXO17_T10-00022	UXO17_T10	15.8	8/3/2011	287586.5	3841602.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.02	Scrap Bin	None	
UXO17_T10-00023	UXO17_T10	92.6	8/3/2011	287586.9	3841606.9	Cultural Debris	Scrap	N/A	N/A	N/A	4	12	20	Scrap Bin	None	
UXO17_T10-00024	UXO17_T10	33.3	8/3/2011	287587.4	3841613.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	250	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T10-00025	UXO17_T10	288	8/3/2011	287588	3841618.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1000	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T10-00026	UXO17_T10	320.8	8/3/2011	287589	3841624.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	500	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T10-00027	UXO17_T10	146.4	8/3/2011	287589.6	3841628.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	1000	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T10-00028	UXO17_T10	4.9	8/3/2011	287590	3841634.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	0.02	Left in Place	None	
UXO17_T103-00002	UXO17_T103	3.2	8/3/2011	287641.7	3841458	Cultural Debris	Scrap	N/A	N/A	N/A	2	5	0.01	Scrap Bin	None	
UXO17_T103-00003	UXO17_T103	11.2	8/3/2011	287640.5	3841471.4	MDAS	Flare	7A1, Star Parax	Empty	Unfuzed	1	2	0.05	Consolidation Poir	Demil	
UXO17_T107-00001	UXO17_T107	7.5	8/3/2011	287604.2	3841443.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.05	Scrap Bin	None	
UXO17_T107-00002	UXO17_T107	29.1	8/3/2011	287604.2	3841447.3	Cultural Debris	Scrap	N/A	N/A	N/A	4	2	0.05	Scrap Bin	None	
UXO17_T107-00003	UXO17_T107	3.4	8/3/2011	287604.4	3841464.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Left in Place	None	
UXO17_T107-00004	UXO17_T107	3.3	8/3/2011	287604.4	3841466.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T107-00005	UXO17_T107	27.6	8/3/2011	287604.5	3841471.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.01	Left in Place	None	Control point
UXO17_T107-00006	UXO17_T107	24.9	8/3/2011	287604.6	3841485.7	Cultural Debris	Scrap	N/A	N/A	N/A	3	4	0.25	Scrap Bin	None	

Anomaly ID	Transect	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
UXO17_T107-00007	UXO17_T107	6.1	8/3/2011	287604.6	3841487.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	Control point
UXO17_T107-00008	UXO17_T107	131.1	8/3/2011	287604.6	3841492.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	2	Scrap Bin	None	
UXO17_T107-00009	UXO17_T107	63.2	8/3/2011	287604.8	3841504	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.01	Left in Place	None	
UXO17_T107-00010	UXO17_T107	3.3	8/3/2011	287605.5	3841522.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T107-00011	UXO17_T107	46.8	8/3/2011	287605.7	3841528.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	5	Scrap Bin	None	
UXO17_T107-00012	UXO17_T107	3.1	8/3/2011	287605.7	3841531	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T107-00013	UXO17_T107	3	8/3/2011	287605.5	3841540.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T107-00015	UXO17_T107	1187	8/3/2011	287605.4	3841548	Cultural Debris	Scrap	N/A	N/A	N/A	6	24	1000	Left in Place	None	
UXO17_T107-00016	UXO17_T107	34.9	8/3/2011	287605.7	3841552.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	200	Left in Place	None	
UXO17_T107-00017	UXO17_T107	336.6	8/3/2011	287606.2	3841559.3	Cultural Debris	Scrap	N/A	N/A	N/A	2	20	100	Left in Place	None	
UXO17_T107-00018	UXO17_T107	302.9	8/3/2011	287606.5	3841562.5	Cultural Debris	Scrap	N/A	N/A	N/A	5	12	300	Left in Place	None	
UXO17_T107-00019	UXO17_T107	117.4	8/3/2011	287606.7	3841565.4	Cultural Debris	Scrap	N/A	N/A	N/A	7	20	300	Left in Place	None	
UXO17_T107-00021	UXO17_T107	1964.7	8/3/2011	287608.2	3841573.2	Cultural Debris	Scrap	N/A	N/A	N/A	7	18	1000	Left in Place	None	Seed #1
UXO17_T107-00022	UXO17_T107	661.1	8/3/2011	287608.9	3841576.6	Cultural Debris	Scrap	N/A	N/A	N/A	3	20	1000	Left in Place	None	
UXO17_T107-00023	UXO17_T107	219.1	8/3/2011	287609.3	3841579.9	Cultural Debris	Scrap	N/A	N/A	N/A	4	16	500	Left in Place	None	
UXO17_T107-00025	UXO17_T107	37.5	8/3/2011	287608.8	3841586.4	Cultural Debris	Scrap	N/A	N/A	N/A	5	24	1000	Left in Place	None	
UXO17_T107-00026	UXO17_T107	2125.2	8/3/2011	287608.6	3841589.7	Cultural Debris	Scrap	N/A	N/A	N/A	12	18	1000	Left in Place	None	
UXO17_T107-00027	UXO17_T107	267.5	8/3/2011	287608.4	3841592.6	Cultural Debris	Scrap	N/A	N/A	N/A	6	18	500	Left in Place	None	
UXO17_T107-00028	UXO17_T107	934.4	8/3/2011	287608.1	3841596.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	200	Left in Place	None	
UXO17_T11-00002	UXO17_T11	6.6	8/3/2011	287565	3841445.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.01	Scrap Bin	None	
UXO17_T11-00003	UXO17_T11	3.1	8/3/2011	287565.2	3841450.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T11-00004	UXO17_T11	4.6	8/3/2011	287565.3	3841452.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T11-00007	UXO17_T11	13.6	8/3/2011	287566.3	3841469.2	Cultural Debris	Scrap	N/A	N/A	N/A	3	6	1	Scrap Bin	None	
UXO17_T11-00008	UXO17_T11	26.7	8/3/2011	287568.5	3841486.6	QC	QC Seed	QC Seed	N/A	N/A	1	2	0.25	Consolidation Poir	None	
UXO17_T11-00009	UXO17_T11	3.3	8/3/2011	287569	3841493	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T11-00010	UXO17_T11	4.6	8/3/2011	287569.1	3841495.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T11-00011	UXO17_T11	3.6	8/3/2011	287569.2	3841500.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T11-00012	UXO17_T11	4.7	8/3/2011	287569.2	3841502.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T11-00013	UXO17_T11	4.1	8/3/2011	287569.4	3841506.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T11-00014	UXO17_T11	5.8	8/3/2011	287569.5	3841513.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T11-00015	UXO17_T11	5.4	8/3/2011	287569.6	3841514.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.01	Scrap Bin	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T10-00003	UXO17_T10	10457.7	8/4/2011	287577.2	3841473.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	500	Scrap Bin	None	
UXO17_T10-00007	UXO17_T10	9.5	8/4/2011	287579.5	3841509.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.5	Scrap Bin	None	
UXO17_T10-00008	UXO17_T10	34.7	8/4/2011	287579.6	3841514.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	
UXO17_T10-00009	UXO17_T10	15.9	8/4/2011	287579.7	3841517	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	1	Scrap Bin	None	
UXO17_T10-00010	UXO17_T10	4.5	8/4/2011	287579.8	3841520	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.02	Scrap Bin	None	
UXO17_T10-00012	UXO17_T10	32	8/4/2011	287580.3	3841531.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.03	Scrap Bin	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T10-00013	UXO17_T10	5.9	8/4/2011	287581.9	3841555.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.1	Scrap Bin	None	
UXO17_T10-00014	UXO17_T10	9.6	8/4/2011	287582.2	3841557.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.1	Scrap Bin	None	
UXO17_T10-00015	UXO17_T10	4.2	8/4/2011	287582.6	3841560.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	250	Left in Place	None	
UXO17_T10-00016	UXO17_T10	177.3	8/4/2011	287583.3	3841565.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1000	Left in Place	None	
UXO17_T10-00017	UXO17_T10	143.8	8/4/2011	287584.2	3841572.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1000	Left in Place	None	
UXO17_T10-00018	UXO17_T10	80	8/4/2011	287584.6	3841577.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	500	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T10-00019	UXO17_T10	249.9	8/4/2011	287585	3841582.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1000	Left in Place	None	
UXO17_T10-00029	UXO17_T10	25.2	8/4/2011	287593	3841656.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.02	Scrap Bin	None	
UXO17_T103-00004	UXO17_T103	4.8	8/4/2011	287640.1	3841490.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.05	Scrap Bin	None	
UXO17_T103-00005	UXO17_T103	3.1	8/4/2011	287640.1	3841494	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.01	Scrap Bin	None	
UXO17_T104-00001	UXO17_T104	4	8/4/2011	287630.5	3841451.5	MDAS	Flare	7A1, Star Para	Empty	Unfuzed	1	2	0.05	Consolidation Poir	Demil	
UXO17_T104-00002	UXO17_T104	30.5	8/4/2011	287629.2	3841467.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	1	Scrap Bin	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T11-00005	UXO17_T11	22.5	8/4/2011	287565.5	3841456.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	1	Scrap Bin	None	
UXO17_T11-00017	UXO17_T11	96.6	8/4/2011	287569.7	3841523.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1	Scrap Bin	None	
UXO17_T11-00018	UXO17_T11	11.6	8/4/2011	287569.9	3841529	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.5	Scrap Bin	None	
UXO17_T11-00019	UXO17_T11	4.9	8/4/2011	287570.2	3841532.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.01	Scrap Bin	None	
UXO17_T11-00020	UXO17_T11	3.4	8/4/2011	287570.5	3841536.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.02	Scrap Bin	None	
UXO17_T11-00021	UXO17_T11	761.7	8/4/2011	287571.5	3841549.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1000	Left in Place	None	
UXO17_T11-00022	UXO17_T11	103.1	8/4/2011	287572	3841555.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	0.01	0.03	Scrap Bin	None	
UXO17_T11-00023	UXO17_T11	6.5	8/4/2011	287572.6	3841562.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.01	Scrap Bin	None	
UXO17_T11-00024	UXO17_T11	5.4	8/4/2011	287573.1	3841566.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.01	Scrap Bin	None	
UXO17_T11-00025	UXO17_T11	3.6	8/4/2011	287573.9	3841570.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.01	Scrap Bin	None	
UXO17_T11-00026	UXO17_T11	14.4	8/4/2011	287574.4	3841573.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.5	Scrap Bin	None	
UXO17_T11-00027	UXO17_T11	166.5	8/4/2011	287575.2	3841577.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	3	Scrap Bin	None	

Phase II Intrusive Investigation Results
Site UXO-17, Former Firing Position 2
MCB CamLej, North Carolina

Anomaly ID	Transect	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
UXO17_T11-00029	UXO17_T11	109.6	8/4/2011	287576.6	3841584.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	500	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T11-00030	UXO17_T11	323.3	8/4/2011	287577.3	3841588.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1000	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T11-00031	UXO17_T11	133.8	8/4/2011	287578.1	3841592.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1000	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T11-00032	UXO17_T11	6.7	8/4/2011	287579.2	3841597.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	10	Scrap Bin	None	
UXO17_T11-00033	UXO17_T11	4.4	8/4/2011	287580.3	3841603	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T11-00034	UXO17_T11	277.8	8/4/2011	287580.3	3841607.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.5	Scrap Bin	None	
UXO17_T11-00035	UXO17_T11	764.2	8/4/2011	287580.1	3841621	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	300	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T11-00037	UXO17_T11	77.4	8/4/2011	287580.9	3841629.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	3	Scrap Bin	None	
UXO17_T11-00038	UXO17_T11	63.8	8/4/2011	287581.4	3841632.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	250	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T11-00039	UXO17_T11	5.5	8/4/2011	287582	3841638.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T11-00040	UXO17_T11	3.3	8/4/2011	287582.6	3841648.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T12-00001	UXO17_T12	17.1	8/4/2011	287555.8	3841445.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.03	Scrap Bin	None	
UXO17_T12-00002	UXO17_T12	13.2	8/4/2011	287556	3841447.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.01	Scrap Bin	None	
UXO17_T12-00003	UXO17_T12	3.5	8/4/2011	287556.5	3841452.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.01	Scrap Bin	None	
UXO17_T12-00004	UXO17_T12	4	8/4/2011	287556.8	3841456.1	Cultural Debris	Scrap	N/A	N/A	N/A	20	10	1	Scrap Bin	None	
UXO17_T12-00005	UXO17_T12	623.5	8/4/2011	287557.5	3841463.5	Cultural Debris	Scrap	N/A	N/A	N/A	2	15	20	Scrap Bin	None	
UXO17_T12-00006	UXO17_T12	46.5	8/4/2011	287558	3841469.5	Cultural Debris	Scrap	N/A	N/A	N/A	2	24	2	Scrap Bin	None	
UXO17_T12-00017	UXO17_T12	4.6	8/4/2011	287560.9	3841528.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.05	Scrap Bin	None	
UXO17_T12-00036	UXO17_T12	5.8	8/4/2011	287570.8	3841632.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.01	Scrap Bin	None	
UXO17_T14-00001	UXO17_T14	3.6	8/4/2011	287545.8	3841424.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.01	Scrap Bin	None	
UXO17_T14-00002	UXO17_T14	26.4	8/4/2011	287546.8	3841431.5	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	0.01	Scrap Bin	None	
UXO17_T14-00003	UXO17_T14	3	8/4/2011	287547.3	3841435.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.01	Scrap Bin	None	
UXO17_T14-00005	UXO17_T14	3.5	8/4/2011	287548.7	3841444.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.01	Scrap Bin	None	
UXO17_T14-00006	UXO17_T14	30.6	8/4/2011	287549.1	3841447.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.02	Scrap Bin	None	
UXO17_T14-00007	UXO17_T14	17.5	8/4/2011	287549.4	3841450.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.03	Scrap Bin	None	
UXO17_T14-00008	UXO17_T14	13.6	8/4/2011	287550.4	3841461.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.01	Scrap Bin	None	
UXO17_T01-00002	UXO17_T01	27.6	8/8/2011	287666.8	3841502.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	0	0.01	Left in Place	None	Control point
UXO17_T118-00008	UXO17_T118	346.8	8/8/2011	287517.9	3841518.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	8	Scrap Bin	None	
UXO17_T118-00009	UXO17_T118	114.3	8/8/2011	287519	3841522.6	Cultural Debris	Scrap	N/A	N/A	N/A	4	4	5	Scrap Bin	None	
UXO17_T118-00010	UXO17_T118	61.3	8/8/2011	287519.7	3841524.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	5	Scrap Bin	None	
UXO17_T12-00008	UXO17_T12	100.7	8/8/2011	287559.2	3841487.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.03	Scrap Bin	None	
UXO17_T12-00009	UXO17_T12	16	8/8/2011	287559.2	3841492	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.01	Scrap Bin	None	
UXO17_T12-00010	UXO17_T12	7.8	8/8/2011	287559.2	3841494.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.01	Scrap Bin	None	
UXO17_T12-00011	UXO17_T12	11.7	8/8/2011	287559.2	3841499.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.02	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T12-00012	UXO17_T12	38.8	8/8/2011	287559.7	3841503.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T12-00013	UXO17_T12	195.6	8/8/2011	287560.1	3841505.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	20	5	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T12-00014	UXO17_T12	58.7	8/8/2011	287560.9	3841510.5	Cultural Debris	Scrap	N/A	N/A	N/A	5	18	1	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T12-00015	UXO17_T12	30.5	8/8/2011	287561.2	3841519.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	0.01	0.01	Left in Place	None	Control point
UXO17_T12-00016	UXO17_T12	74.3	8/8/2011	287561	3841521.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.5	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T12-00018	UXO17_T12	4.8	8/8/2011	287561	3841531.1	Cultural Debris	Scrap	N/A	N/A	N/A	5	3	0.05	Scrap Bin	None	
UXO17_T12-00020	UXO17_T12	9.4	8/8/2011	287561.2	3841536.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.01	Scrap Bin	None	
UXO17_T12-00021	UXO17_T12	15.7	8/8/2011	287561.4	3841539.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.5	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T12-00022	UXO17_T12	45.3	8/8/2011	287561.7	3841544.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.03	Scrap Bin	None	
UXO17_T12-00023	UXO17_T12	7.9	8/8/2011	287562	3841546.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.5	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T12-00024	UXO17_T12	13.7	8/8/2011	287562.4	3841550.5	Cultural Debris	Scrap	N/A	N/A	N/A	5	4	0.02	Scrap Bin	None	
UXO17_T12-00025	UXO17_T12	4.9	8/8/2011	287563.3	3841559.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.02	Scrap Bin	None	
UXO17_T12-00026	UXO17_T12	3.1	8/8/2011	287563.9	3841567.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.01	Scrap Bin	None	
UXO17_T12-00028	UXO17_T12	1686.2	8/8/2011	287564.5	3841574.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.1	Scrap Bin	None	
UXO17_T12-00029	UXO17_T12	86.6	8/8/2011	287565.3	3841578.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.02	Scrap Bin	None	
UXO17_T12-00030	UXO17_T12	7.4	8/8/2011	287566	3841583.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.01	Scrap Bin	None	
UXO17_T12-00031	UXO17_T12	3.4	8/8/2011	287567.4	3841600.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.01	Scrap Bin	None	

Anomaly ID	Transect	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
UXO17_T12-00032	UXO17_T12	75.2	8/8/2011	287569.2	3841622.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	3	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T12-00033	UXO17_T12	36.9	8/8/2011	287569.5	3841624.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.5	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T12-00034	UXO17_T12	61.5	8/8/2011	287569.8	3841626.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	2	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T12-00035	UXO17_T12	41	8/8/2011	287570.3	3841629.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	3	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T13-00001	UXO17_T13	828.7	8/8/2011	287552.1	3841600.2	Cultural Debris	Scrap	N/A	N/A	N/A	4	5	0.02	Scrap Bin	None	
UXO17_T13-00002	UXO17_T13	9.9	8/8/2011	287553.8	3841604.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	
UXO17_T13-00003	UXO17_T13	5.7	8/8/2011	287556.4	3841611.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.02	Scrap Bin	None	
UXO17_T13-00005	UXO17_T13	1130.6	8/8/2011	287560	3841623.2	Cultural Debris	Scrap	N/A	N/A	N/A	4	24	0.1	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T13-00006	UXO17_T13	21.4	8/8/2011	287561.4	3841627.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.5	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T13-00007	UXO17_T13	3.5	8/8/2011	287564.2	3841639.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.01	Scrap Bin	None	
UXO17_T13-00008	UXO17_T13	934	8/8/2011	287566.7	3841650.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.01	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T13-00009	UXO17_T13	90.8	8/8/2011	287568	3841657.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T13-00010	UXO17_T13	3.2	8/8/2011	287569	3841662.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.01	Scrap Bin	None	
UXO17_T14-00009	UXO17_T14	21.6	8/8/2011	287550.5	3841465.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	0.2	Scrap Bin	None	
UXO17_T14-00010	UXO17_T14	4	8/8/2011	287550.6	3841467.3	Cultural Debris	Scrap	N/A	N/A	N/A	2	5	0.01	Scrap Bin	None	
UXO17_T14-00011	UXO17_T14	4.5	8/8/2011	287551.9	3841478.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.02	Scrap Bin	None	
UXO17_T14-00012	UXO17_T14	5.6	8/8/2011	287552.8	3841483.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.01	Scrap Bin	None	
UXO17_T14-00013	UXO17_T14	12.6	8/8/2011	287553.4	3841487.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.02	Scrap Bin	None	
UXO17_T14-00015	UXO17_T14	3.2	8/8/2011	287554	3841494.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.02	Scrap Bin	None	
UXO17_T14-00016	UXO17_T14	43.7	8/8/2011	287554.2	3841496.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	2	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T14-00017	UXO17_T14	101.8	8/8/2011	287554.5	3841501.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	2	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T14-00018	UXO17_T14	5.9	8/8/2011	287554.8	3841503.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	3	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T14-00019	UXO17_T14	301.5	8/8/2011	287556.1	3841507.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	4	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T14-00020	UXO17_T14	5.1	8/8/2011	287557.2	3841510.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.02	Scrap Bin	None	
UXO17_T14-00021	UXO17_T14	9.9	8/8/2011	287558.7	3841516.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.5	Scrap Bin	None	
UXO17_T14-00022	UXO17_T14	28.5	8/8/2011	287558.1	3841523.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	0.5	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T14-00023	UXO17_T14	4.4	8/8/2011	287557.4	3841529.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.05	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T14-00024	UXO17_T14	27.5	8/8/2011	287557.3	3841530.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	10	Scrap Bin	None	
UXO17_T14-00025	UXO17_T14	185.5	8/8/2011	287556.9	3841534.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	20	Scrap Bin	None	
UXO17_T14-00026	UXO17_T14	8.8	8/8/2011	287556.8	3841538	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.04	Scrap Bin	None	
UXO17_T14-00027	UXO17_T14	573.8	8/8/2011	287557	3841540.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	30	Scrap Bin	None	
UXO17_T14-00028	UXO17_T14	233.5	8/8/2011	287557.2	3841543.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T14-00029	UXO17_T14	87.5	8/8/2011	287557.4	3841549.3	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.5	Scrap Bin	None	
UXO17_T14-00030	UXO17_T14	3.1	8/8/2011	287558.1	3841556.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.01	Scrap Bin	None	
UXO17_T14-00031	UXO17_T14	392.7	8/8/2011	287559.3	3841568.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	11	Scrap Bin	None	
UXO17_T14-00032	UXO17_T14	9.3	8/8/2011	287559.3	3841579.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.01	Scrap Bin	None	
UXO17_T14-00033	UXO17_T14	24	8/8/2011	287559.2	3841581.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.02	Scrap Bin	None	
UXO17_T14-00034	UXO17_T14	416.1	8/8/2011	287559	3841585	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	3	Scrap Bin	None	
UXO17_T14-00035	UXO17_T14	239.5	8/8/2011	287558.8	3841588.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	4	Scrap Bin	None	
UXO17_T14-00036	UXO17_T14	15.1	8/8/2011	287558.6	3841591.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.01	Scrap Bin	None	
UXO17_T14-00037	UXO17_T14	4	8/8/2011	287559.3	3841596.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.02	Scrap Bin	None	
UXO17_T14-00038	UXO17_T14	9.1	8/8/2011	287559.7	3841598.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.05	Scrap Bin	None	
UXO17_T15-00001	UXO17_T15	16.3	8/8/2011	287537.4	3841422.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	10	Left in Place	None	Scrap removed but signature remains beyond 2 feet.

Anomaly ID	Transect	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
UXO17_T15-00002	UXO17_T15	9.4	8/8/2011	287537.6	3841423.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1	Scrap Bin	None	
UXO17_T15-00003	UXO17_T15	65.5	8/8/2011	287537.8	3841425.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.02	Scrap Bin	None	
UXO17_T15-00004	UXO17_T15	13.2	8/8/2011	287538.4	3841430.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.02	Scrap Bin	None	
UXO17_T15-00005	UXO17_T15	239.7	8/8/2011	287539.4	3841442.5	Cultural Debris	Scrap	N/A	N/A	N/A	6	0.01	0.05	Scrap Bin	None	
UXO17_T15-00007	UXO17_T15	4.9	8/8/2011	287540	3841451.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.02	Scrap Bin	None	
			8/8/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T15-00008	UXO17_T15	10.4		287540.2	3841459.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.1	Left in Place	None	
UXO17_T15-00009	UXO17_T15	6.9	8/8/2011	287543.8	3841485.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.01	Scrap Bin	None	
UXO17_T15-00010	UXO17_T15	6.3	8/8/2011	287544.1	3841488.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.02	Scrap Bin	None	
			8/8/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T15-00011	UXO17_T15	35.8		287545.9	3841504.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.05	Left in Place	None	
			8/8/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T15-00012	UXO17_T15	3.4		287546.6	3841507.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.01	Left in Place	None	
UXO17_T15-00013	UXO17_T15	9.2	8/8/2011	287547.1	3841509.7	Cultural Debris	Scrap	N/A	N/A	N/A	5	1	0.02	Scrap Bin	None	
UXO17_T15-00014	UXO17_T15	1882.3	8/8/2011	287548	3841513.8	Cultural Debris	Scrap	N/A	N/A	N/A	10	0.01	50	Scrap Bin	None	
			8/8/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T15-00015	UXO17_T15	16.4		287548.3	3841517.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.5	Left in Place	None	
UXO17_T15-00016	UXO17_T15	3.7	8/8/2011	287548.4	3841520.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.01	Scrap Bin	None	
UXO17_T15-00017	UXO17_T15	11.9	8/8/2011	287548.4	3841522	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	0.02	Scrap Bin	None	
UXO17_T15-00018	UXO17_T15	13.4	8/8/2011	287548.8	3841530.8	Cultural Debris	Scrap	N/A	N/A	N/A	4	3	0.05	Scrap Bin	None	
UXO17_T15-00019	UXO17_T15	305.7	8/8/2011	287550.1	3841537.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.02	Scrap Bin	None	
UXO17_T15-00020	UXO17_T15	7.5	8/8/2011	287550.8	3841540.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.01	Scrap Bin	None	
			8/8/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T15-00021	UXO17_T15	14.7		287551.4	3841543	Cultural Debris	Scrap	N/A	N/A	N/A	2	24	0.1	Left in Place	None	
UXO17_T16-00007	UXO17_T16	9.9	8/8/2011	287532.6	3841458.6	MDAS	Flare	7A1, Star Para	Empty	Unfuzed	1	8	0.5	Consolidation Poir	Demil	
UXO17_T117-00001	UXO17_T117	4.1	8/9/2011	287518.7	3841478.8	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	
			8/9/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T117-00002	UXO17_T117	3.6		287519.3	3841480.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.5	Left in Place	None	
UXO17_T117-00003	UXO17_T117	6.4	8/9/2011	287520.6	3841485.8	Cultural Debris	Scrap	N/A	N/A	N/A	4	2	0.01	Scrap Bin	None	
UXO17_T117-00004	UXO17_T117	6.3	8/9/2011	287521.9	3841490.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.01	Scrap Bin	None	
UXO17_T117-00005	UXO17_T117	4.7	8/9/2011	287522.5	3841492.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.03	Scrap Bin	None	
			8/9/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T117-00007	UXO17_T117	341		287527.5	3841512.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	35	Left in Place	None	
UXO17_T117-00009	UXO17_T117	48.3	8/9/2011	287530.7	3841532.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	20	3	Scrap Bin	None	
UXO17_T118-00001	UXO17_T118	3.8	8/9/2011	287510.6	3841484.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	20	3	Scrap Bin	None	
UXO17_T118-00002	UXO17_T118	13	8/9/2011	287511.2	3841487.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.01	Scrap Bin	None	
UXO17_T118-00003	UXO17_T118	4.5	8/9/2011	287511.6	3841489.3	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	0.02	Scrap Bin	None	
UXO17_T118-00004	UXO17_T118	13.1	8/9/2011	287512.8	3841495.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.01	Scrap Bin	None	
			8/9/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T118-00005	UXO17_T118	53.4		287513.8	3841501	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.05	Left in Place	None	
			8/9/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T118-00006	UXO17_T118	6.2		287515.8	3841511	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.05	Left in Place	None	
UXO17_T16-00001	UXO17_T16	77.5	8/9/2011	287528.9	3841427.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	10	Scrap Bin	None	
UXO17_T16-00002	UXO17_T16	5.6	8/9/2011	287528.9	3841429.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.05	Scrap Bin	None	
UXO17_T16-00003	UXO17_T16	7.6	8/9/2011	287529	3841431.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.02	Scrap Bin	None	
UXO17_T16-00004	UXO17_T16	61.7	8/9/2011	287529	3841435	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.5	Scrap Bin	None	
			8/9/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T16-00006	UXO17_T16	185.1		287529.3	3841445	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	12	Left in Place	None	
UXO17_T16-00008	UXO17_T16	8.4	8/9/2011	287533.2	3841461.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.05	Scrap Bin	None	
			8/9/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T16-00009	UXO17_T16	16.2		287533.7	3841463.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.5	Left in Place	None	
			8/9/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T16-00010	UXO17_T16	35		287529.7	3841472.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1	Left in Place	None	
UXO17_T16-00011	UXO17_T16	4.3	8/9/2011	287528.7	3841475.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1	Scrap Bin	None	
UXO17_T16-00012	UXO17_T16	5.2	8/9/2011	287529.2	3841478.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.02	Scrap Bin	None	
UXO17_T16-00014	UXO17_T16	4.8	8/9/2011	287530.5	3841487.5	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	1	Scrap Bin	None	
UXO17_T16-00015	UXO17_T16	4.5	8/9/2011	287530.8	3841489.5	Cultural Debris	Scrap	N/A	N/A	N/A	5	8	3	Scrap Bin	None	
			8/9/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T16-00016	UXO17_T16	14.7		287533.4	3841502.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.02	Left in Place	None	
			8/9/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T16-00017	UXO17_T16	186.2		287534.7	3841507.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	24	5	Left in Place	None	

Anomaly ID	Transect	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
UXO17_T16-00018	UXO17_T16	77.8	8/9/2011	287536.5	3841513.7	Cultural Debris	Scrap	N/A	N/A	N/A	2	24	3	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T16-00019	UXO17_T16	54.2	8/9/2011	287537.6	3841517	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	2	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T16-00020	UXO17_T16	17	8/9/2011	287538.5	3841520.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.1	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T16-00021	UXO17_T16	10	8/9/2011	287539.1	3841525.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.02	Scrap Bin	None	
UXO17_T16-00022	UXO17_T16	29.9	8/9/2011	287539.4	3841527.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.5	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T16-00023	UXO17_T16	10.6	8/9/2011	287540	3841532.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.05	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T16-00024	UXO17_T16	3.3	8/9/2011	287540.6	3841536.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.02	Scrap Bin	None	
UXO17_T16-00026	UXO17_T16	4.6	8/9/2011	287541.6	3841544.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.25	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T16-00027	UXO17_T16	3.1	8/9/2011	287541.8	3841546	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.02	Scrap Bin	None	
UXO17_T17-00001	UXO17_T17	257.5	8/9/2011	287517.8	3841436.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.05	Scrap Bin	None	
UXO17_T18-00001	UXO17_T18	245.7	8/9/2011	287491.4	3841390.7	Cultural Debris	Scrap	N/A	N/A	N/A	4	2	0.04	Scrap Bin	None	
UXO17_T18-00002	UXO17_T18	5.4	8/9/2011	287497.5	3841400.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.05	Scrap Bin	None	
UXO17_T18-00004	UXO17_T18	4.5	8/9/2011	287502.3	3841408.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.02	Scrap Bin	None	
UXO17_T18-00005	UXO17_T18	3.2	8/9/2011	287503.6	3841411.1	Cultural Debris	Scrap	N/A	N/A	N/A	2	10	0.06	Scrap Bin	None	
UXO17_T18-00006	UXO17_T18	2944.7	8/9/2011	287504.1	3841413.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	18	10	Scrap Bin	None	
UXO17_T18-00008	UXO17_T18	4.9	8/9/2011	287506.1	3841424.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.05	Scrap Bin	None	
UXO17_T18-00009	UXO17_T18	5	8/9/2011	287508.4	3841436.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.02	Scrap Bin	None	
UXO17_T23-00008	UXO17_T23	215.8	8/9/2011	287458.8	3841524.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	5	Scrap Bin	None	
UXO17_T23-00009	UXO17_T23	11.8	8/9/2011	287458.7	3841533.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.25	Scrap Bin	None	
UXO17_T24-00008	UXO17_T24	4.3	8/9/2011	287448.9	3841478.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.02	Scrap Bin	None	
UXO17_T24-00009	UXO17_T24	8.3	8/9/2011	287448.9	3841486.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.05	Scrap Bin	None	
UXO17_T24-00010	UXO17_T24	4	8/9/2011	287448.8	3841492.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.01	Scrap Bin	None	
UXO17_T24-00011	UXO17_T24	3.2	8/9/2011	287448.8	3841504.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.01	Scrap Bin	None	
UXO17_T24-00012	UXO17_T24	5.1	8/9/2011	287448.8	3841507.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.05	Scrap Bin	None	
UXO17_T24-00013	UXO17_T24	3.9	8/9/2011	287448.8	3841511.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.01	Scrap Bin	None	
UXO17_T24-00015	UXO17_T24	3.7	8/9/2011	287448.8	3841524.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.03	Scrap Bin	None	
UXO17_T24-00016	UXO17_T24	176.2	8/9/2011	287448.8	3841529.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	3	Scrap Bin	None	
UXO17_T25-00006	UXO17_T25	2503.9	8/9/2011	287437.8	3841476.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	10	Scrap Bin	None	
UXO17_T25-00007	UXO17_T25	4.4	8/9/2011	287437.9	3841478	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	10	Scrap Bin	None	
UXO17_T25-00008	UXO17_T25	3.1	8/9/2011	287438.7	3841490	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.02	Scrap Bin	None	
UXO17_T25-00009	UXO17_T25	59.3	8/9/2011	287438.8	3841492.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.25	Scrap Bin	None	
UXO17_T25-00011	UXO17_T25	118.4	8/9/2011	287439.2	3841514	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.05	Scrap Bin	None	
UXO17_T25-00012	UXO17_T25	4.1	8/9/2011	287438.9	3841527.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.05	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T25-00013	UXO17_T25	3.5	8/9/2011	287438.8	3841529.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.03	Scrap Bin	None	
UXO17_T25-00014	UXO17_T25	5.8	8/9/2011	287438.8	3841532.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	0.01	0.02	Scrap Bin	None	
UXO17_T25-00015	UXO17_T25	9.2	8/9/2011	287438.7	3841535.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.05	Scrap Bin	None	
UXO17_T26-00001	UXO17_T26	7.4	8/9/2011	287427.5	3841434.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	5	0.05	Scrap Bin	None	
UXO17_T26-00002	UXO17_T26	20.9	8/9/2011	287427.9	3841439.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.03	Scrap Bin	None	
UXO17_T26-00003	UXO17_T26	4.3	8/9/2011	287428.2	3841442.2	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	
UXO17_T26-00004	UXO17_T26	4	8/9/2011	287428.8	3841454.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.02	Scrap Bin	None	
UXO17_T26-00005	UXO17_T26	3.4	8/9/2011	287428	3841471.6	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	
UXO17_T26-00006	UXO17_T26	6.3	8/9/2011	287427.9	3841475.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.02	Scrap Bin	None	
UXO17_T26-00007	UXO17_T26	5.3	8/9/2011	287427.9	3841477.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.05	Scrap Bin	None	
UXO17_T26-00008	UXO17_T26	3.6	8/9/2011	287427.8	3841480.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.01	Scrap Bin	None	
UXO17_T26-00009	UXO17_T26	3.2	8/9/2011	287427.8	3841482.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.02	Scrap Bin	None	
UXO17_T26-00010	UXO17_T26	4.3	8/9/2011	287427.8	3841489.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	
UXO17_T26-00011	UXO17_T26	17.3	8/9/2011	287427.8	3841497.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.25	Scrap Bin	None	
UXO17_T26-00012	UXO17_T26	4.2	8/9/2011	287428.5	3841513.4	Cultural Debris	Scrap	N/A	N/A	N/A	100	6	0.05	Left in Place	None	Trash pile
UXO17_T26-00013	UXO17_T26	6.5	8/9/2011	287428.6	3841515.7	Cultural Debris	Scrap	N/A	N/A	N/A	100	5	0.05	Left in Place	None	Trash pile
UXO17_T26-00014	UXO17_T26	14.2	8/9/2011	287428.7	3841520	Cultural Debris	Scrap	N/A	N/A	N/A	100	5	0.05	Left in Place	None	Trash pile
UXO17_T26-00015	UXO17_T26	3.3	8/9/2011	287428.7	3841521.9	Cultural Debris	Scrap	N/A	N/A	N/A	100	10	0.02	Left in Place	None	Trash pile
UXO17_T27-00001	UXO17_T27	3.5	8/9/2011	287418	3841435.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.01	Scrap Bin	None	
UXO17_T27-00002	UXO17_T27	4.2	8/9/2011	287418.1	3841436.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.02	Scrap Bin	None	
UXO17_T27-00003	UXO17_T27	6.6	8/9/2011	287418.3	3841438.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.5	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T27-00004	UXO17_T27	7	8/9/2011	287418.5	3841440.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.5	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T27-00005	UXO17_T27	17	8/9/2011	287419	3841443.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.05	Scrap Bin	None	
UXO17_T27-00006	UXO17_T27	4.2	8/9/2011	287419.3	3841445.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.02	Scrap Bin	None	

Phase II Intrusive Investigation Results
Site UXO-17, Former Firing Position 2
MCB CamLej, North Carolina

Anomaly ID	Transect	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
UXO17_T27-00007	UXO17_T27	5.2	8/9/2011	287419.6	3841479.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.05	Scrap Bin	None	
UXO17_T27-00008	UXO17_T27	22.3	8/9/2011	287418.3	3841496.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	0.01	0.01	Left in Place	None	Control point
UXO17_T28-00001	UXO17_T28	7.9	8/9/2011	287412.2	3841445.3	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	
UXO17_T28-00002	UXO17_T28	3.7	8/9/2011	287413.3	3841451.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	0.02	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T28-00003	UXO17_T28	4.6	8/9/2011	287413.4	3841452.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T28-00004	UXO17_T28	10.3	8/9/2011	287414.6	3841461.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.25	Scrap Bin	None	
UXO17_T28-00005	UXO17_T28	36.9	8/9/2011	287414.6	3841462.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	18	0.25	Scrap Bin	None	
UXO17_T28-00006	UXO17_T28	6.2	8/9/2011	287414.5	3841465.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	
UXO17_T28-00007	UXO17_T28	4.9	8/9/2011	287414.4	3841472.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.03	Scrap Bin	None	
UXO17_T28-00008	UXO17_T28	51.3	8/9/2011	287414.3	3841475.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	10	Scrap Bin	None	
UXO17_T28-00009	UXO17_T28	5.6	8/9/2011	287414.2	3841479.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.15	Scrap Bin	None	
UXO17_T28-00010	UXO17_T28	10.4	8/9/2011	287413.2	3841487.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	6	Scrap Bin	None	
UXO17_T28-00011	UXO17_T28	304.7	8/9/2011	287413	3841489.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	1	Scrap Bin	None	
UXO17_T122-00001	UXO17_T122	3.2	8/10/2011	287463.5	3841421.5	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	
UXO17_T122-00002	UXO17_T122	3.2	8/10/2011	287464.6	3841425.4	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	
UXO17_T122-00003	UXO17_T122	4.5	8/10/2011	287465.2	3841427.3	Facility Resource	Road	N/A	N/A	N/A	0	0	0	Left in Place	None	Not investigated, in road in front of gate
UXO17_T122-00004	UXO17_T122	31.1	8/10/2011	287465.7	3841429.1	Cultural Debris	Scrap	N/A	N/A	N/A	4	6	5	Scrap Bin	None	
UXO17_T122-00005	UXO17_T122	3.3	8/10/2011	287466.5	3841431.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.02	Scrap Bin	None	
UXO17_T122-00006	UXO17_T122	5.4	8/10/2011	287470.2	3841447.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.05	Scrap Bin	None	
UXO17_T18-00003	UXO17_T18	3.8	8/10/2011	287499.2	3841403.3	Facility Resource	Road	N/A	N/A	N/A	0	0	0	Left in Place	None	Not investigated, in road in front of gate
UXO17_T19-00001	UXO17_T19	111.4	8/10/2011	287487.1	3841403.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	1	Scrap Bin	None	Control point
UXO17_T19-00002	UXO17_T19	791	8/10/2011	287488.9	3841408.9	Facility Resource	Road	N/A	N/A	N/A	0	0	0	Left in Place	None	Not investigated, in road in front of gate
UXO17_T19-00003	UXO17_T19	4.1	8/10/2011	287490.4	3841413.7	Cultural Debris	Scrap	N/A	N/A	N/A	3	2	0.05	Scrap Bin	None	
UXO17_T19-00004	UXO17_T19	37.2	8/10/2011	287491.7	3841456.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	1	0.05	Scrap Bin	None	
UXO17_T19-00005	UXO17_T19	29.8	8/10/2011	287491.8	3841449.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.1	Scrap Bin	None	
UXO17_T19-00006	UXO17_T19	26.5	8/10/2011	287492	3841422.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.25	Scrap Bin	None	
UXO17_T19-00007	UXO17_T19	14.3	8/10/2011	287492	3841447.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.05	Scrap Bin	None	
UXO17_T19-00009	UXO17_T19	3	8/10/2011	287493.5	3841463.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	
UXO17_T19-00010	UXO17_T19	3.5	8/10/2011	287494.2	3841467	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.02	Scrap Bin	None	
UXO17_T19-00011	UXO17_T19	13.4	8/10/2011	287496.3	3841476.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	0.02	Scrap Bin	None	
UXO17_T19-00012	UXO17_T19	4.5	8/10/2011	287499	3841483.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.02	Scrap Bin	None	
UXO17_T19-00013	UXO17_T19	6.4	8/10/2011	287499.6	3841485.3	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	0.5	Scrap Bin	None	
UXO17_T19-00014	UXO17_T19	3.2	8/10/2011	287501	3841488.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.05	Scrap Bin	None	
UXO17_T20-00001	UXO17_T20	4.2	8/10/2011	287474.5	3841393	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.25	Scrap Bin	None	
UXO17_T20-00002	UXO17_T20	12.7	8/10/2011	287475.4	3841396.9	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.05	Scrap Bin	None	
UXO17_T20-00003	UXO17_T19	536.2	8/10/2011	287481	3841415	Facility Resource	Road	N/A	N/A	N/A	0	0	0	Left in Place	None	Not investigated, in road in front of gate
UXO17_T20-00004	UXO17_T20	3.8	8/10/2011	287486.8	3841439.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	
UXO17_T20-00005	UXO17_T20	17	8/10/2011	287487.8	3841447.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.05	Scrap Bin	None	
UXO17_T20-00006	UXO17_T20	49.1	8/10/2011	287486.5	3841450.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	100	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T21-00001	UXO17_T21	321.1	8/10/2011	287467.4	3841401.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	25	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T21-00002	UXO17_T21	23.8	8/10/2011	287471.1	3841415.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	50	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T21-00003	UXO17_T21	3.2	8/10/2011	287472.6	3841419.1	Facility Resource	Road	N/A	N/A	N/A	0	0	0	Left in Place	None	Not investigated, in road in front of gate
UXO17_T21-00006	UXO17_T21	122.5	8/10/2011	287477.1	3841454.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	100	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T21-00007	UXO17_T21	69.6	8/10/2011	287472.8	3841459.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	100	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T22-00001	UXO17_T22	6	8/10/2011	287465.5	3841459.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.02	Scrap Bin	None	
UXO17_T22-00002	UXO17_T22	6.3	8/10/2011	287465.9	3841462.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	50	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T23-00003	UXO17_T23	11.3	8/10/2011	287456.7	3841448.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.05	Scrap Bin	None	
UXO17_T23-00004	UXO17_T23	308.2	8/10/2011	287457.8	3841463.5	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	2	Scrap Bin	None	
UXO17_T23-00007	UXO17_T23	27.9	8/10/2011	287463.9	3841492.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1	Scrap Bin	None	
UXO17_T24-00001	UXO17_T24	7.1	8/10/2011	287448.9	3841410.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	1	Scrap Bin	None	
UXO17_T24-00002	UXO17_T24	3.9	8/10/2011	287448.9	3841428.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.02	Scrap Bin	None	
UXO17_T24-00004	UXO17_T24	3.3	8/10/2011	287449.9	3841464.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.05	Scrap Bin	None	
UXO17_T24-00005	UXO17_T24	4.4	8/10/2011	287449.7	3841466.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.05	Scrap Bin	None	
UXO17_T24-00006	UXO17_T24	4.7	8/10/2011	287449.5	3841469.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.05	Scrap Bin	None	

Phase II Intrusive Investigation Results
Site UXO-17, Former Firing Position 2
MCB CamLej, North Carolina

Anomaly ID	Transect	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
UXO17_T24-00014	UXO17_T24	3.5	8/10/2011	287448.8	3841516	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.2	Scrap Bin	None	
UXO17_T25-00001	UXO17_T25	3	8/10/2011	287437.4	3841425.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	1	Scrap Bin	None	
UXO17_T25-00002	UXO17_T25	13.8	8/10/2011	287436.8	3841432.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	
UXO17_T25-00003	UXO17_T25	11.6	8/10/2011	287436.4	3841453.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	1	Scrap Bin	None	
UXO17_T25-00004	UXO17_T25	5.5	8/10/2011	287436.4	3841456.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.1	Scrap Bin	None	
UXO17_T25-00005	UXO17_T25	9.1	8/10/2011	287437.1	3841466.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.05	Scrap Bin	None	
UXO17_T29-00001	UXO17_T29	3.5	8/10/2011	287400	3841456.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.15	Scrap Bin	None	
			8/10/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T29-00003	UXO17_T29	15.5		287404.3	3841480.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	100	Left in Place	None	
UXO17_T19-00015	UXO17_T19	4.5	8/11/2011	287501.8	3841491.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.05	Scrap Bin	None	
			8/11/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T19-00016	UXO17_T19	39.9		287503.7	3841499.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	100	Left in Place	None	
UXO17_T19-00017	UXO17_T19	5.7	8/11/2011	287504.3	3841501.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	0.02	Scrap Bin	None	
UXO17_T19-00019	UXO17_T19	33.3	8/11/2011	287507.2	3841515.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	1	Scrap Bin	None	
			8/11/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T19-00020	UXO17_T19	208.4		287508.5	3841522.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1000	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
			8/11/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T19-00021	UXO17_T19	35.2		287509	3841525.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	500	Left in Place	None	
UXO17_T20-00008	UXO17_T20	3.8	8/11/2011	287483.7	3841466.3	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.05	Scrap Bin	None	
UXO17_T20-00009	UXO17_T20	8	8/11/2011	287484.8	3841469.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.02	Scrap Bin	None	
UXO17_T20-00010	UXO17_T20	5.8	8/11/2011	287485.5	3841471.9	Cultural Debris	Scrap	N/A	N/A	N/A	2	18	1	Scrap Bin	None	
UXO17_T20-00011	UXO17_T20	10.9	8/11/2011	287486	3841473.7	Cultural Debris	Scrap	N/A	N/A	N/A	4	12	1	Scrap Bin	None	
UXO17_T20-00012	UXO17_T20	13.9	8/11/2011	287486.9	3841476.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.5	Scrap Bin	None	
UXO17_T20-00013	UXO17_T20	15	8/11/2011	287487.4	3841478.1	Cultural Debris	Scrap	N/A	N/A	N/A	2	18	2	Scrap Bin	None	
UXO17_T20-00014	UXO17_T20	7.8	8/11/2011	287488.8	3841482.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	20	1.5	Scrap Bin	None	
UXO17_T20-00015	UXO17_T20	4.3	8/11/2011	287489.5	3841485.2	Cultural Debris	Scrap	N/A	N/A	N/A	3	12	0.5	Scrap Bin	None	
UXO17_T20-00016	UXO17_T20	6.4	8/11/2011	287490.3	3841489.6	Cultural Debris	Scrap	N/A	N/A	N/A	5	10	0.25	Scrap Bin	None	
UXO17_T20-00018	UXO17_T20	4.2	8/11/2011	287491.7	3841497.5	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.05	Scrap Bin	None	
UXO17_T20-00019	UXO17_T20	6.6	8/11/2011	287492.3	3841500.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.02	Scrap Bin	None	
UXO17_T20-00020	UXO17_T20	3.6	8/11/2011	287493.8	3841506.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.01	Scrap Bin	None	
UXO17_T20-00021	UXO17_T20	3.6	8/11/2011	287494.9	3841510.1	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.1	Scrap Bin	None	
			8/11/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T20-00022	UXO17_T20	15.6		287496.8	3841517	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1	Left in Place	None	
UXO17_T20-00023	UXO17_T20	89.5	8/11/2011	287497.9	3841520.7	Cultural Debris	Scrap	N/A	N/A	N/A	2	18	2	Scrap Bin	None	
UXO17_T21-00005	UXO17_T21	3.5	8/11/2011	287480.8	3841450.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.05	Scrap Bin	None	
			8/11/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T21-00008	UXO17_T21	245.2		287473.8	3841466.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	1000	Left in Place	None	
UXO17_T21-00009	UXO17_T21	26.8	8/11/2011	287475.7	3841475.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.15	Scrap Bin	None	
UXO17_T21-00010	UXO17_T21	12.6	8/11/2011	287477.9	3841484.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.05	Scrap Bin	None	
UXO17_T21-00011	UXO17_T21	49.7	8/11/2011	287478.9	3841488.4	Cultural Debris	Scrap	N/A	N/A	N/A	3	6	2	Scrap Bin	None	
UXO17_T21-00012	UXO17_T21	3.4	8/11/2011	287481.4	3841497.7	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	0.05	Scrap Bin	None	
			8/11/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T21-00013	UXO17_T21	3.2		287483.2	3841503.9	Cultural Debris	Scrap	N/A	N/A	N/A	2	24	50	Left in Place	None	
UXO17_T21-00015	UXO17_T21	4.7	8/11/2011	287486.4	3841513.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	0.1	Scrap Bin	None	
UXO17_T22-00003	UXO17_T22	8.9	8/11/2011	287466.2	3841464.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.1	Scrap Bin	None	
UXO17_T22-00004	UXO17_T22	40.7	8/11/2011	287466.5	3841466.5	Cultural Debris	Scrap	N/A	N/A	N/A	2	10	0.5	Scrap Bin	None	
UXO17_T22-00005	UXO17_T22	3.6	8/11/2011	287466.7	3841467.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.02	Scrap Bin	None	
UXO17_T22-00006	UXO17_T22	75.1	8/11/2011	287467.4	3841472.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	2	Scrap Bin	None	
UXO17_T22-00007	UXO17_T22	5.2	8/11/2011	287468.2	3841477.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.25	Scrap Bin	None	
			8/11/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T22-00008	UXO17_T22	6		287468.9	3841480.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	18	0.5	Left in Place	None	
UXO17_T22-00010	UXO17_T22	32.1	8/11/2011	287470.4	3841488.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	1	Scrap Bin	None	
UXO17_T22-00011	UXO17_T22	3	8/11/2011	287471.8	3841496.2	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	
UXO17_T22-00012	UXO17_T22	4.7	8/11/2011	287472.6	3841500.3	Cultural Debris	Scrap	N/A	N/A	N/A	2	0.01	0.02	Scrap Bin	None	
UXO17_T22-00013	UXO17_T22	3.3	8/11/2011	287474.1	3841508.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.01	Scrap Bin	None	
UXO17_T23-00005	UXO17_T23	3.5	8/11/2011	287459.1	3841468.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.25	Scrap Bin	None	
			8/11/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T26-00016	UXO17_T26	12.7		287428.6	3841527.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	50	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
			8/11/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T26-00017	UXO17_T26	70		287428.5	3841530.5	Cultural Debris	Scrap	N/A	N/A	N/A	2	24	25	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
			8/11/2011													Scrap removed but signature remains beyond 2 feet.
UXO17_T26-00018	UXO17_T26	400.2		287428.5	3841534	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	100	Left in Place	None	

Anomaly ID	Transect	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
UXO17_T26-00019	UXO17_T26	855.9	8/11/2011	287428.5	3841536.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	200	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T27-00009	UXO17_T27	4.1	8/11/2011	287418.1	3841498.8	Cultural Debris	Scrap	N/A	N/A	N/A	4	3	0.15	Scrap Bin	None	
UXO17_T27-00010	UXO17_T27	38.6	8/11/2011	287417.8	3841501.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	1	Scrap Bin	None	
UXO17_T27-00011	UXO17_T27	3.1	8/11/2011	287417.7	3841503.3	Cultural Debris	Scrap	N/A	N/A	N/A	2	24	10	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T27-00012	UXO17_T27	132.1	8/11/2011	287417.5	3841505.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	1	Scrap Bin	None	
UXO17_T27-00013	UXO17_T27	1975.5	8/11/2011	287417.2	3841509.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	500	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T27-00014	UXO17_T27	6.5	8/11/2011	287417.4	3841513.7	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.15	Scrap Bin	None	
UXO17_T27-00015	UXO17_T27	49	8/11/2011	287417.5	3841515.9	Cultural Debris	Scrap	N/A	N/A	N/A	2	18	2	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T27-00016	UXO17_T27	11585.9	8/11/2011	287417.7	3841520.4	Cultural Debris	Scrap	N/A	N/A	N/A	4	24	2000	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T27-00017	UXO17_T27	52.7	8/11/2011	287417.9	3841525.4	Cultural Debris	Scrap	N/A	N/A	N/A	3	6	10	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T27-00018	UXO17_T27	1634.3	8/11/2011	287418.1	3841528.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	500	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T27-00019	UXO17_T27	351.8	8/11/2011	287418.5	3841536	Cultural Debris	Scrap	N/A	N/A	N/A	2	8	25	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T28-00012	UXO17_T28	13.3	8/11/2011	287412.7	3841492.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	5	Scrap Bin	None	
UXO17_T28-00013	UXO17_T28	306.1	8/11/2011	287412.1	3841498.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	2	Scrap Bin	None	
UXO17_T28-00014	UXO17_T28	4.3	8/11/2011	287411.8	3841500.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	0.05	Scrap Bin	None	
UXO17_T28-00015	UXO17_T28	414	8/11/2011	287411.5	3841503.7	Cultural Debris	Scrap	N/A	N/A	N/A	3	6	2	Scrap Bin	None	
UXO17_T28-00016	UXO17_T28	443.9	8/11/2011	287410.6	3841511.8	No Contact	No Contact	N/A	N/A	N/A	0	0	0	Left in Place	None	
UXO17_T28-00017	UXO17_T28	4	8/11/2011	287410.3	3841516.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	10	0.5	Scrap Bin	None	
UXO17_T31-00001	UXO17_T31	3.6	8/11/2011	287375.8	3841537.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.01	Left in Place	None	
UXO17_T28-00018	UXO17_T28	17.4	8/15/2011	287410.3	3841520.7	Cultural Debris	Scrap	N/A	N/A	N/A	2	12	2	Left in Place	None	
UXO17_T28-00019	UXO17_T28	3	8/15/2011	287410.3	3841523.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.1	Scrap Bin	None	
UXO17_T28-00020	UXO17_T28	2144.4	8/15/2011	287410.2	3841527.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	5	Scrap Bin	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T28-00021	UXO17_T28	3.6	8/15/2011	287410.2	3841534.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.05	Scrap Bin	None	
UXO17_T28-00022	UXO17_T28	3.1	8/15/2011	287410.2	3841537.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.1	Scrap Bin	None	
UXO17_T28-00023	UXO17_T28	8.3	8/15/2011	287410.2	3841539.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	0.01	0.15	Scrap Bin	None	
UXO17_T29-00002	UXO17_T29	9	8/15/2011	287402.5	3841470.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	0.1	Scrap Bin	None	
UXO17_T29-00005	UXO17_T29	364.4	8/15/2011	287404.1	3841487.7	Cultural Debris	Scrap	N/A	N/A	N/A	3	12	6	Scrap Bin	None	
UXO17_T29-00006	UXO17_T29	1337.4	8/15/2011	287404	3841490.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	5	Scrap Bin	None	
UXO17_T29-00007	UXO17_T29	3.6	8/15/2011	287404	3841492.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.02	Scrap Bin	None	
UXO17_T29-00008	UXO17_T29	30.2	8/15/2011	287403.5	3841510.3	Cultural Debris	Scrap	N/A	N/A	N/A	2	1	0.5	Scrap Bin	None	
UXO17_T29-00009	UXO17_T29	54.6	8/15/2011	287403	3841524.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	2	Left in Place	None	
UXO17_T29-00010	UXO17_T29	7.3	8/15/2011	287402.9	3841526.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.02	Scrap Bin	None	
UXO17_T29-00011	UXO17_T29	122.6	8/15/2011	287402.8	3841529.5	Cultural Debris	Scrap	N/A	N/A	N/A	8	5	8	Consolidation Poir	None	

Anomaly ID	Transect	Amplitude	Dig Date	Coordinate (X) ¹	Coordinate (Y) ¹	Item Group	Class	Category	Type	Description	Quantity	Depth (inches)	Weight (lbs)	Action Taken	Demo Req?	Item Comment
UXO17_T29-00012	UXO17_T29	99.8	8/15/2011	287402.8	3841531.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	5	Consolidation Poir	None	
UXO17_T29-00013	UXO17_T29	5.8	8/15/2011	287403	3841533.4	Cultural Debris	Scrap	N/A	N/A	N/A	10	10	0.05	Scrap Bin	None	
UXO17_T30-00001	UXO17_T30	4.7	8/15/2011	287389.3	3841496.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.02	Scrap Bin	None	
UXO17_T30-00002	UXO17_T30	56.2	8/15/2011	287388.6	3841518.1	Cultural Debris	Scrap	N/A	N/A	N/A	5	5	0.25	Scrap Bin	None	
UXO17_T30-00003	UXO17_T30	18.6	8/15/2011	287388.7	3841527	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.5	Consolidation Poir	None	
UXO17_T30-00004	UXO17_T30	35.4	8/15/2011	287388.8	3841531	Cultural Debris	Scrap	N/A	N/A	N/A	3	12	1.5	Consolidation Poir	None	
UXO17_T30-00005	UXO17_T30	3.8	8/15/2011	287388.9	3841534	Cultural Debris	Scrap	N/A	N/A	N/A	3	6	5	Consolidation Poir	None	
UXO17_T30-00006	UXO17_T30	22.7	8/15/2011	287389.1	3841539.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	0.01	0.01	Left in Place	None	Survey point
UXO17_T30-00007	UXO17_T30	11.9	8/15/2011	287389.4	3841546	Cultural Debris	Scrap	N/A	N/A	N/A	4	18	3	Scrap Bin	None	
UXO17_T30-00008	UXO17_T30	5.3	8/15/2011	287389.6	3841548.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.03	Scrap Bin	None	
UXO17_T30-00009	UXO17_T30	5.6	8/15/2011	287389.7	3841550.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.02	Scrap Bin	None	
UXO17_T30-00010	UXO17_T30	10.3	8/15/2011	287390	3841554.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.05	Scrap Bin	None	
UXO17_T30-00011	UXO17_T30	32.3	8/15/2011	287390.1	3841556.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	5	0.05	Scrap Bin	None	
UXO17_T30-00012	UXO17_T30	63.9	8/15/2011	287390.5	3841563.8	Cultural Debris	Scrap	N/A	N/A	N/A	10	18	2	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T30-00013	UXO17_T30	4.1	8/15/2011	287389.9	3841577.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	10	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T33-00001	UXO17_T33	4.5	8/15/2011	287410	3841602.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.5	Scrap Bin	None	
UXO17_T33-00002	UXO17_T33	186.5	8/15/2011	287409.7	3841610.5	Cultural Debris	Scrap	N/A	N/A	N/A	2	2	0.25	Scrap Bin	None	
UXO17_T33-00003	UXO17_T33	3.2	8/15/2011	287409.6	3841615.4	Cultural Debris	Scrap	N/A	N/A	N/A	2	3	0.15	Scrap Bin	None	
UXO17_T34-00001	UXO17_T34	29.1	8/15/2011	287418.4	3841620.6	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.25	Scrap Bin	None	
UXO17_T35-00001	UXO17_T35	4.2	8/15/2011	287427.2	3841629.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	0.01	2	Scrap Bin	None	
UXO17_T36-00001	UXO17_T36	7.2	8/15/2011	287438.9	3841637.5	Cultural Debris	Scrap	N/A	N/A	N/A	8	1	20	Consolidation Poir	None	
UXO17_T36-00002	UXO17_T36	44.3	8/15/2011	287438.3	3841645.7	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	2	Consolidation Poir	None	
UXO17_T37-00001	UXO17_T37	43.1	8/15/2011	287448	3841645.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	1	0.5	Consolidation Poir	None	
UXO17_T11-00001	UXO17_T11	35.7	8/16/2011	287564.4	3841432.5	Cultural Debris	Scrap	N/A	N/A	N/A	2	4	0.25	Scrap Bin	None	
UXO17_T23-00001	UXO17_T23	7.5	8/16/2011	287455.3	3841429	Facility Resource	Road	N/A	N/A	N/A	0	0	0	Left in Place	None	Not investigated, in road in front of gate
UXO17_T23-00002	UXO17_T23	20.8	8/16/2011	287454.4	3841436.2	Facility Resource	Road	N/A	N/A	N/A	0	0	0	Left in Place	None	Not investigated, in road in front of gate
UXO17_T37-00002	UXO17_T37	3.9	8/16/2011	287448.1	3841647.6	Cultural Debris	Scrap	N/A	N/A	N/A	3	1	1.5	Consolidation Poir	None	
UXO17_T37-00003	UXO17_T37	7.9	8/16/2011	287448.2	3841652.8	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.5	Scrap Bin	None	
UXO17_T38-00001	UXO17_T38	5.6	8/16/2011	287460.5	3841657.1	Cultural Debris	Scrap	N/A	N/A	N/A	3	3	0.5	Consolidation Poir	None	
UXO17_T39-00001	UXO17_T39	4.5	8/16/2011	287470.3	3841662.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.02	Scrap Bin	None	
UXO17_T39-00002	UXO17_T39	6.7	8/16/2011	287471.5	3841667.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	2	0.03	Scrap Bin	None	
UXO17_T41-00001	UXO17_T41	9.4	8/16/2011	287487.2	3841659.7	Cultural Debris	Scrap	N/A	N/A	N/A	4	2	0.1	Scrap Bin	None	
UXO17_T41-00002	UXO17_T41	64.2	8/16/2011	287487.7	3841661.7	QC	QC Seed	QC Seed	N/A	N/A	1	3	0.25	Consolidation Poir	None	Seed #2
UXO17_T42-00001	UXO17_T42	20.7	8/16/2011	287500	3841652.3	Cultural Debris	Scrap	N/A	N/A	N/A	4	4	0.1	Scrap Bin	None	
UXO17_T42-00002	UXO17_T42	5.4	8/16/2011	287501.2	3841654.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	6	0.15	Scrap Bin	None	
UXO17_T43-00001	UXO17_T43	22	8/16/2011	287511.7	3841642.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	100	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T44-00001	UXO17_T44	32.4	8/16/2011	287520.9	3841631.7	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	1	Scrap Bin	None	
UXO17_T44-00003	UXO17_T44	3.2	8/16/2011	287535.1	3841652.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.1	Scrap Bin	None	
UXO17_T44-00005	UXO17_T44	148.5	8/16/2011	287537.9	3841657.9	Cultural Debris	Scrap	N/A	N/A	N/A	26	12	22	Consolidation Poir	None	
UXO17_T45-00001	UXO17_T45	4.3	8/16/2011	287527.8	3841620.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	0.01	0.01	Scrap Bin	None	
UXO17_T45-00002	UXO17_T45	3.3	8/16/2011	287529.6	3841622.3	Cultural Debris	Scrap	N/A	N/A	N/A	1	4	0.05	Scrap Bin	None	
UXO17_T45-00003	UXO17_T45	3.7	8/16/2011	287532.5	3841625.3	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	2	Scrap Bin	None	
UXO17_T45-00004	UXO17_T45	5.1	8/16/2011	287535.2	3841628.2	Cultural Debris	Scrap	N/A	N/A	N/A	1	18	3	Scrap Bin	None	
UXO17_T45-00005	UXO17_T45	3	8/16/2011	287536.9	3841630.1	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.05	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T45-00006	UXO17_T45	3.3	8/16/2011	287539.6	3841633.1	Cultural Debris	Scrap	N/A	N/A	N/A	2	6	0.02	Scrap Bin	None	
UXO17_T45-00007	UXO17_T45	160.2	8/16/2011	287545.1	3841639.2	Cultural Debris	Scrap	N/A	N/A	N/A	2	18	5	Consolidation Poir	None	
UXO17_T45-00008	UXO17_T45	8.2	8/16/2011	287551.8	3841650.4	Cultural Debris	Scrap	N/A	N/A	N/A	1	12	0.5	Scrap Bin	None	
UXO17_T45-00010	UXO17_T45	953.2	8/16/2011	287556.1	3841661.2	Cultural Debris	Scrap	N/A	N/A	N/A	3	18	300	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T45-00011	UXO17_T45	37.6	8/16/2011	287557.5	3841665.8	Cultural Debris	Scrap	N/A	N/A	N/A	1	3	2	Consolidation Poir	None	
UXO17_T46-00001	UXO17_T46	132.4	8/16/2011	287550.5	3841623.5	Cultural Debris	Scrap	N/A	N/A	N/A	1	24	10	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T46-00002	UXO17_T46	16.1	8/16/2011	287559.8	3841648.9	Cultural Debris	Scrap	N/A	N/A	N/A	1	8	1	Consolidation Poir	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T46-00003	UXO17_T46	38.2	8/16/2011	287560.8	3841652.6	Cultural Debris	Scrap	N/A	N/A	N/A	2	20	10	Left in Place	None	Scrap removed but signature remains beyond 2 feet.
UXO17_T46-00004	UXO17_T46	975	8/16/2011	287562.5	3841658.6	Cultural Debris	Scrap	N/A	N/A	N/A	5	18	2500	Left in Place	None	Scrap removed but signature remains beyond 2 feet.

¹Coordinates in the UTM Grid System, NAD83

Appendix H

Laboratory Analytical Data

Table 1
Camp Lejeune - UXO-17
Validated Surface Soil Detected Analytical Results
2008 - 2011

Station ID	ASR2_212-FR2-DU01			ASR2_212-FR2-DU02			
Sample ID	ASR2_212-FR2-DU01-SS01-08D	ASR2_212-FR2-DU01-SS02-08D	ASR2_212-FR2-DU01-SS03-08D	ASR2_212-FR2-DU02-SS01D-08D	ASR2_212-FR2-DU02-SS01-08D	ASR2_212-FR2-DU02-SS02-08D	ASR2_212-FR2-DU02-SS03-08D
Sample Date	10/06/08	10/06/08	10/06/08	10/06/08	10/06/08	10/06/08	10/06/08
Chemical Name							
Semivolatile Organic Compounds (µg/kg)							
2,4-Dinitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U
2,6-Dinitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U
Nitrobenzene	620 U	620 U	620 U	620 U	620 U	620 U	620 U
Explosives (µg/kg)							
1,3,5-Trinitrobenzene	620 UJ	620 UJ	620 UJ	620 UJ	620 UJ	620 UJ	620 UJ
1,3-Dinitrobenzene	620 U	620 U	620 U	620 U	620 U	620 U	620 U
2,4,6-Trinitrotoluene	620 U	620 U	620 U	620 U	620 U	620 U	620 U
2-Amino-4,6-dinitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U
2-Nitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U
3-Nitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U
4-Amino-2,6-dinitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U
4-Nitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U
Nitroglycerin	NA	NA	NA	NA	NA	NA	NA
Perchlorate	2.1 U	2.2 U	2.2 U	2.3 U	2.3 U	2.4 U	2.4 U
PETN	NA	NA	NA	NA	NA	NA	NA
RDX	620 U	620 U	620 U	620 U	620 U	620 U	620 U
Total Metals (mg/kg)							
Aluminum	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.71 UJ	0.71 UJ	0.74 UJ	0.69 UJ	0.76 UJ	0.8 UJ	0.81 UJ
Barium	4.9 J	4.8 J	6.2 J	7 J	6.5 J	7.8 J	6.4 J
Beryllium	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.07 U	0.07 U	0.07 U	0.07 U	0.08 U	0.08 U	0.08 U
Calcium	NA	NA	NA	NA	NA	NA	NA
Chromium	2.6	2.8	2.5	3.8	3.8	4.3	3.8
Cobalt	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA	NA	NA
Lead	4.6	4.3	4.1	6.6	6.6	7.2	6
Magnesium	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	NA	NA
Mercury	0.017 UJ	0.018 UJ	0.018 UJ	0.022 J	0.023 J	0.022 J	0.02 UJ
Nickel	NA	NA	NA	NA	NA	NA	NA
Potassium	NA	NA	NA	NA	NA	NA	NA
Selenium	0.45 UJ	0.45 UJ	0.47 UJ	0.44 UJ	0.48 UJ	0.51 UJ	0.51 UJ
Sodium	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA
Wet Chemistry							
% Solids (pct)	93.1	92.4	91.2	88.8	87.9	82.5	84.4

C:\Documents and Settings\user\Desktop\UXO 17\App H Analytical Data\Table 1_UXO-17_Final_SS_RDE_tbl.xls], thom1, 07/19/2011

Notes:

- Shading indicates detections
- NA - Not analyzed

J - Analyte present, value may or may not be accurate or precise

J- - Analyte present, value may be biased low, actual value may be higher

J+ - Analyte present, value may be biased high, actual value may be lower

N - Tentative Identification, consider present, special methods may be needed to confirm its presence or absence in future sampling efforts

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

mg/kg - Milligrams per kilogram

pct - Percent

µg/kg - Micrograms per kilogram

Table 1
Camp Lejeune - UXO-17
Validated Surface Soil Detected Analytical Results
2008 - 2011

Station ID	ASR2_212-FR2-DU03			MR17-DU01			MR17-DU02			
Sample ID	ASR2_212-FR2-DU03-SS01-08D	ASR2_212-FR2-DU03-SS02-08D	ASR2_212-FR2-DU03-SS03-08D	MR17-DU01-SS01-10D	MR17-DU01-SS02-10D	MR17-DU01-SS03-10D	MR17-DU02D-SS03-10D	MR17-DU02-SS01-10D	MR17-DU02-SS02-10D	MR17-DU02-SS03-10D
Sample Date	10/06/08	10/06/08	10/06/08	11/30/10	11/30/10	11/30/10	11/30/10	11/30/10	11/30/10	11/30/10
Chemical Name										
Semivolatile Organic Compounds (µg/kg)										
2,4-Dinitrotoluene	1,200 U	1,200 U	1,200 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
2,6-Dinitrotoluene	1,200 U	1,200 U	1,200 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
Nitrobenzene	620 U	620 U	620 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
Explosives (µg/kg)										
1,3,5-Trinitrobenzene	620 UJ	620 UJ	620 UJ	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
1,3-Dinitrobenzene	620 U	620 U	620 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
2,4,6-Trinitrotoluene	620 U	620 U	620 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
2-Amino-4,6-dinitrotoluene	1,200 U	1,200 U	1,200 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
2-Nitrotoluene	1,200 U	1,200 U	1,200 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
3-Nitrotoluene	1,200 U	1,200 U	1,200 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
4-Amino-2,6-dinitrotoluene	1,200 U	1,200 U	1,200 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
4-Nitrotoluene	1,200 U	1,200 U	1,200 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
Nitroglycerin	NA	NA	NA	200 U	196 U	200 U	200 U	198 U	198 U	196 U
Perchlorate	2.4 U	2.4 U	2.4 U	1.21 J	2.09 U	2.08 U	2.27 U	2.14 U	2.25 U	2.13 U
PETN	NA	NA	NA	200 U	196 U	200 U	200 U	198 U	198 U	196 U
RDX	620 U	620 U	620 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
Total Metals (mg/kg)										
Aluminum	NA	NA	NA	1,550	3,410	2,860	6,890	6,760	6,220	5,840
Arsenic	0.74 UJ	0.79 UJ	0.77 UJ	1.84	1.85	7.69 U	0.688	0.528 J	0.667	0.523 J
Barium	7.8 J	7.9 J	7.5 J	3.34	4.32	12.8 U	15.2	13.3	14.2	13.1
Beryllium	NA	NA	NA	0.104 J	0.107 J	2.56 U	0.0918 J	0.0899 J	0.0842 J	0.0809 J
Cadmium	0.07 U	0.08 U	0.08 U	0.485	0.353	1.5 J	0.091 J	0.0866 J	0.0996 J	0.0867 J
Calcium	NA	NA	NA	112,000	78,700	158,000	267 J	221 J	539	284
Chromium	4.5	4.3	4.7	3.39	4.03	5.06 J	6.57	6.58	6.24	5.67
Cobalt	NA	NA	NA	2.4	2.33	12.8 U	0.426 J	0.382 J	0.374 J	0.33 J
Copper	NA	NA	NA	1.18	1.39	10.3 U	1.35	1.5	1.76	1.34
Iron	NA	NA	NA	1,920	1,940	2,800	1,870	1,660	1,670	1,600
Lead	6	5.4	6.7	2.31	2.46	3.84 U	6.2	4.71	5.42	6.48
Magnesium	NA	NA	NA	1,440	1,060	2,220 J	278 J	273	241 J	228 J
Manganese	NA	NA	NA	103	74	186	5.25	4.82	5.37	4.68
Mercury	0.018 UJ	0.018 UJ	0.019 UJ	0.0266 U	0.0194 J	0.0247 J	0.0161 J	0.024 J	0.0198 J	0.0239 J
Nickel	NA	NA	NA	11.4	11.1	16	1.52	1.41	1.43	1.26
Potassium	NA	NA	NA	337	335	459	172 J	164 J	158 J	142 J
Selenium	0.47 UJ	0.5 UJ	0.49 UJ	0.331 J	0.289 J	6.41 U	0.274 J	0.266 U	0.28 U	0.25 J
Sodium	NA	NA	NA	62 J	60 J	3,840 U	169 U	160 U	168 U	163 U
Vanadium	NA	NA	NA	3.61	5.07	12.8 U	7.89	6.95	7.24	6.8
Zinc	NA	NA	NA	10.3	8.92	11.2 J	3.88	3.27	4.03	3.56
Wet Chemistry										
% Solids (pct)	83	84.7	83.9	NA	NA	NA	NA	NA	NA	NA

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Notes:

Shading indicates detections

NA - Not analyzed
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UJ - Analyte not detected, quantitation limit may be inaccurate
mg/kg - Milligrams per kilogram
pct - Percent
µg/kg - Micrograms per kilogram

Table 1
Camp Lejeune - UXO-17
Validated Surface Soil Detected Analytical Results
2008 - 2011

Station ID	MR17-DU03			MR17-SS01	MR17-SS02	MR17-SS03	MR17-SS04	MR17-SS05	MR17-SS06	MR17-SS07	MR17-SS08		MR17-SS09	MR17-SS10	MR17-SS11		MR17-SS12
Sample ID	MR17-DU03-SS01-10D	MR17-DU03-SS02-10D	MR17-DU03-SS03-10D	MR17-SS01-10D	MR17-SS02-10D	MR17-SS03-10D	MR17-SS04-10D	MR17-SS05-10D	MR17-SS06-10D	MR17-SS07-10D	MR17-SS08-10D	MR17-SS08D-10D	MR17-SS09-10D	MR17-SS10-10D	MR17-SS11-10D	MR17-SS11D-10D	MR17-SS12-10D
Sample Date	11/30/10	11/30/10	11/30/10	12/01/10	12/01/10	12/01/10	12/01/10	12/01/10	12/01/10	12/01/10	12/01/10	12/01/10	12/01/10	12/02/10	12/01/10	12/01/10	12/02/10
Chemical Name																	
Semivolatile Organic Compounds (µg/kg)																	
2,4-Dinitrotoluene	39.6 U	39.6 U	39.2 U	40 U	38.5 U	40 U	38.5 U	39.2 U	39.6 U	40 U	38.5 U	40 U	38.8 U	40 UJ	39.6 U	38.8 U	40 UJ
2,6-Dinitrotoluene	39.6 U	39.6 U	39.2 U	40 U	38.5 U	40 U	38.5 U	39.2 U	39.6 U	40 U	38.5 U	32.7 J	38.8 U	24.5 J	39.6 U	38.8 U	40 U
Nitrobenzene	39.6 U	39.6 U	39.2 U	40 U	38.5 U	40 U	38.5 U	39.2 U	39.6 U	40 U	38.5 U	40 U	38.8 U	40 U	39.6 U	38.8 U	40 U
Explosives (µg/kg)																	
1,3,5-Trinitrobenzene	39.6 U	39.6 U	232 U	40 U	38.5 U	40 U	38.5 U	39.2 U	39.6 U	40 U	38.5 U	40 U	38.8 U	40 U	39.6 U	38.8 U	40 U
1,3-Dinitrobenzene	39.6 U	39.6 U	39.2 U	40 U	38.5 U	40 U	38.5 U	39.2 U	39.6 U	40 U	38.5 U	40 U	38.8 U	37.5 J	39.6 U	38.8 U	32 J
2,4,6-Trinitrotoluene	39.6 U	39.6 U	39.2 U	40 U	38.5 U	40 U	150 N	39.2 U	39.6 U	40 U	215 N	47.4 U	38.8 U	40 UJ	39.6 U	38.8 U	40 UJ
2-Amino-4,6-dinitrotoluene	39.6 U	39.6 U	144 U	40 U	38.5 U	40 U	38.5 U	39.2 U	39.6 U	40 U	38.5 U	40 U	38.8 U	75.1 U	39.6 U	75.9 U	40 U
2-Nitrotoluene	39.6 U	39.6 U	50.2 U	40 U	38.5 U	40 U	38.5 U	39.2 U	83.5 U	40 U	38.5 U	40 U	38.8 U	40 U	123 N	131 N	40 U
3-Nitrotoluene	39.6 U	39.6 U	39.2 U	40 U	38.5 U	40 U	55.9 U	39.2 U	23.9 J	40 U	38.5 U	40 U	107 U	40 U	39.6 U	38.8 U	40 U
4-Amino-2,6-dinitrotoluene	39.6 U	39.6 U	39.2 U	40 U	38.5 U	40 U	38.5 U	39.2 U	39.6 U	40 U	38.5 U	40 U	38.8 U	40 U	39.6 U	38.8 U	40 U
4-Nitrotoluene	39.6 U	39.6 U	365 U	40 U	38.5 U	40 U	38.5 U	39.2 U	39.6 U	40 U	38.5 U	40 U	38.8 U	40 U	39.6 U	38.8 U	40 U
Nitroglycerin	198 U	198 U	196 U	200 U	192 U	200 U	192 U	196 U	198 U	200 U	235 U	203 J	194 U	200 U	261 J	194 U	200 U
Perchlorate	8.07	2.19 U	2.19 U	2.19 U	2.29 U	2.16 U	2.16 U	2.55 U	2.33 U	2.52 U	2.42 U	2.52 U	2.17 U	2.36 U	2.23 U	2.21 U	2.35 U
PETN	198 U	198 U	196 U	200 U	192 U	200 U	192 U	196 U	198 U	200 U	192 U	107 J	194 U	200 U	198 U	194 U	200 U
RDX	55 U	39.6 U	374 J	56.8 J	38.5 U	40 U	52.7 U	39.2 U	39.6 U	40 U	646 U	40 U	63 U	40 U	39.6 U	38.8 U	40 U
Total Metals (mg/kg)																	
Aluminum	3,820	3,980	2,470	995	792	119	603	2,130	322	6,340	490	457	4,240	2,330	165	147	6,060
Arsenic	0.82	0.663	0.567	0.188 J	0.353 U	0.316 U	0.334 U	0.271 J	0.236 J	1.93	0.365 U	0.211 J	0.791	0.525 J	0.333 U	0.323 U	1.05
Barium	11.5	11.3	8.55	2.05 J	3.31	0.75 J	1.19 J	3.87	8.57	15.1	3.05	7.57	6.42	5.88	1.08 J	1.02 J	10.3
Beryllium	0.08 J	0.0743 J	0.108 U	0.108 U	0.118 U	0.0555 J	0.111 U	0.124 U	0.117 U	0.204 J	0.122 U	0.129 U	0.073 J	0.119 U	0.111 U	0.108 U	0.0737 J
Cadmium	0.228 J	0.0964 J	0.108 J	0.115 U	0.15 U	0.105 U	0.111 U	0.124 U	0.112 J	0.885	0.104 J	0.133 J	0.107 U	0.119 U	0.0858 J	0.0923 J	0.118 U
Calcium	3,820	504	540	510 J-	2,640 J-	21,800 J-	167 J+	389 J+	460 J+	26,100 J-	305 J+	787 J+	108 J+	687	133 J+	102 J+	259 J
Chromium	5.39	4.4	3.07	1.03	1.13	0.411 J	0.73	2.27	0.641	8.73	0.973	0.94	4.88	3	0.512 J	0.506 J	6.48
Cobalt	0.569 U	0.525 U	0.541 U	0.539 U	0.588 U	0.526 U	0.556 U	0.619 U	0.583 U	1.15	0.608 U	0.644 U	0.535 U	0.593 U	0.555 U	0.539 U	0.591 U
Copper	2.07	1.08	0.955	0.508 J	0.92	0.421 U	0.399 J	0.629	1.35	4.74	0.505 J	1.2	0.447 J	0.763	1.18	1	1.13
Iron	1,990	1,770	1,340	220	422	78.8	166	356	227	3,250	271	266	1,750	830	117	108	3,810
Lead	12.7	8.52	5.84	3.04	3.36	2.06	2.1	2.68	12.2	13.5	3.1	6.13	3.74	3.17	2.69	2.47	5.31
Magnesium	206 J	137 J	105 J	62.9 J+	141 J+	158 U	167 U	69.4 J	175 U	478 J+	182 U	66.1 J	111 J	96.6 J	166 U	162 U	165 J+
Manganese	9.47	5.43	5.71	4.27	10.6	40.3	2.82	1.86	2.82	48.2	2.69	4.87	2.71	9.96	2.71	2.26	2.98
Mercury	0.02 J	0.0193 J	0.0171 J	0.0158 J	0.0145 J	0.0314 U	0.0324 U	0.0421 U	0.0348 J	0.0381	0.0172 J	0.0302 J	0.0175 J	0.0138 J	0.015 J	0.0138 J	0.0267 J
Nickel	1.05	0.768	0.544	0.261 J	0.757	0.316 U	0.334 U	0.619 J	0.216 J	2.88	0.365 U	0.309 J	0.549	0.608	0.333 U	0.323 U	0.838
Potassium	112 J	110 J	99 J	162 U	76.5 J+	279 J+	167 U	75 J+	175 U	330 J+	72.3 J+	82.5 J+	182 J+	151 J	166 U	162 U	136 J+
Selenium	0.187 J	0.29 J	0.28 J	0.267 J	0.182 J	0.263 U	0.278 U	0.248 J	0.301 J	1.15	0.208 J	0.339 J	0.268 J	0.446 U	0.189 J	0.27 U	0.295 J
Sodium	171 U	157 U	162 U	162 U	176 U	158 U	167 U	186 U	175 U	187 U	182 U	193 U	160 U	178 U	166 U	162 U	177 U
Vanadium	5.53	5.78	4.02	1.3	1.49	10.3	0.739	2.43	1.23	12.3	1.87	1.57	6.78	3.89	0.876	0.842	9.9
Zinc	18.9	3.7	3.46	1.82	4.99	0.611 J	1.51	1.98	1.7	34.7	1.75	2.77	1.9	5.54	1.64	1.4	2.36
Wet Chemistry																	
% Solids (pct)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Notes:

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U - The material was analyzed for, but not detected
UJ - Analyte not detected, quantitation limit may be inaccurate
mg/kg - Milligrams per kilogram
pct - Percent
µg/kg - Micrograms per kilogram

Table 1
Camp Lejeune - UXO-17
Validated Surface Soil Detected Analytical Results
2008 - 2011

Station ID	MR17-SS13	MR17-SS14	MR17-SS15	MR17-SS16	MR17-SS17	MR17-SS18	MR17-SS19	MR17-SS20		MR17-SS21
Sample ID	MR17-SS13-10D	MR17-SS14-10D	MR17-SS15-10D	MR17-SS16-10D	MR17-SS17-10D	MR17-SS18-10D	MR17-SS19-10D	MR17-SS20-11A	MR17-SS20P-11A	MR17-SS21-11A
Sample Date	12/02/10	12/02/10	12/02/10	12/02/10	12/02/10	12/02/10	12/02/10	3/30/11	3/30/11	3/30/11
Chemical Name										
Semivolatile Organic Compounds (µg/kg)										
2,4-Dinitrotoluene	40 U	127 J	40 U	40 UJ	516 J	40 U	40 UJ	NA	NA	NA
2,6-Dinitrotoluene	40 U	117 U	40 U	40 U	291 U	40 U	40 U	NA	NA	NA
Nitrobenzene	221 U	4,290 N	40 U	3,230 U	89	40 U	40 U	NA	NA	NA
Explosives (µg/kg)										
1,3,5-Trinitrobenzene	28 J	40 U	40 U	40 U	40 U	40 U	40 U	0.115 JMP	0.174 U	0.174 U
1,3-Dinitrobenzene	40 U	95.6 U	29.1 J	40 U	40 U	40 U	40 U	0.19 U	0.174 U	0.174 UN
2,4,6-Trinitrotoluene	40 UJ	40 UJ	40 UJ	40 UJ	40 UJ	36.4 J	40 UJ	0.19 U	0.174 U	0.174 U
2-Amino-4,6-dinitrotoluene	40 U	43.6 U	40 U	76.3 N	80.1 U	40 U	104 U	0.19 U	0.111 JMP	0.174 U
2-Nitrotoluene	40 U	40 U	40 U	40 U	67.4 J	40 U	40 U	0.19 U	0.174 U	0.174 U
3-Nitrotoluene	40 U	40 U	40 U	484 U	40 U	40 U	40 U	0.19 U	0.174 U	0.174 UN
4-Amino-2,6-dinitrotoluene	40 U	40 U	40 U	40 U	40 U	40 U	40 U	0.212 J	0.21 J	0.174 U
4-Nitrotoluene	134 J	70.3 J	40 U	40 U	352 U	40 U	40 U	0.19 U	0.174 U	0.174 UN
Nitroglycerin	200 U	200 U	200 U	200 U	206 J	200 U	200 U	0.476 U	0.435 U	0.435 U
Perchlorate	2.35 U	2.27 U	2.24 U	2.24 U	2.62 U	2.34 U	2.4 U	2.33 U	2.3 U	2.31 U
PETN	998	1,060	200 U	2,620 U	200 U	200 U	200 U	0.476 U	0.435 U	0.435 U
RDX	72.4 U	78.9	40 U	292 U	168 N	40 U	40 U	0.19 U	0.114 JP	0.174 U
Total Metals (mg/kg)										
Aluminum	2,410	2,740	3,250	2,270	6,050	2,220	2,150	4,030	3,970	4,330
Arsenic	0.591	0.577	0.806	0.562 J	1.35	0.478 J	0.481 J	1.09	1.06	1.19
Barium	10.9	7.79	8.12	9.52	16.9	4.49	8.01	12	10.9	10.3
Beryllium	0.116 U	0.115 U	0.0613 J	0.114 U	0.0931 J	0.117 U	0.118 U	0.0969 Y, J	0.101 Y, J	0.101 Y, J
Cadmium	0.185 U	0.143 U	0.112 U	0.143 U	0.206 J	0.117 U	0.118 U	0.0756 J	0.0663 J	0.115 U
Calcium	753 J-	655 J-	344 J-	589 J-	2,040 J-	166 J-	1,710	5,340 *	4,760 *	9,320 *
Chromium	2.8	4.39	4.07	2.05	6.72	3.14	2.7	4.68	4.69	5.57
Cobalt	0.582 U	0.573 U	0.554 U	0.571 U	0.395 J	0.587 U	0.59 U	0.593 U	0.583 U	0.577 U
Copper	1.15	0.981	0.709	1.07	2.7	0.684	3.51	1.93	1.72	1.8
Iron	1,500	1,540	1,890	1,090	3,680	1,330	1,320	2,710	2,580	3,210
Lead	5.72	11	5.55	10.3	7.85	3.81	4.21	9	8.61	6.2
Magnesium	124 J+	97.6 J+	107 J+	96.3 J+	229 J+	79.3 J+	96.7 J	251 JN	265 JN	546 N
Manganese	44.9	5.72	4.06	10.8	8.36	2.53	20	14.1	12.2	14
Mercury	0.0267 J	0.0236 J	0.0173 J	0.0233 J	0.0334 J	0.035 U	0.0165 J	0.0174 J	0.0176 J	0.0143 J
Nickel	0.602	0.589	0.483 J	0.428 J	1.34	0.319 J	0.64	1.12	1.08	1.19
Potassium	93.6 J+	101 J+	111 J+	72.2 J+	205 J+	88.2 J+	120 J	160 J	163 J	198 J
Selenium	0.215 J	0.267 J	0.342 J	0.315 J	0.389 J	0.279 J	0.392 U	0.284 J	0.215 J	0.289 U
Sodium	175 U	172 U	166 U	171 U	198 U	176 U	177 U	178 U	175 U	173 U
Vanadium	4.61	4.78	6.29	3.05	10.8	4.93	3.99	7.55	6.54	8.16
Zinc	6.08	3.71	2.31	4.34	5	1.9	5.09	64.7	66.7	14.6
Wet Chemistry										
% Solids (pct)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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UJ - Analyte not detected, quantitation limit may be inaccurate
mg/kg - Milligrams per kilogram
pct - Percent
µg/kg - Micrograms per kilogram

Table 2
Camp Lejeune - UXO-17
Validated Surface Soil Detected Analytical Results
June 2011

Sample ID	MR17-SS22-11B	MR17-SS22D-11B
Sample Date	6/1/11	6/1/11
Chemical Name		
Volatile Organic Compounds (UG/KG)		
Toluene	5.65 U	2.4 U
Semivolatile Organic Compounds (UG/KG)		
Anthracene	3.65 U	21
Benzo(b)fluoranthene	3.65 U	64.6
Benzo(k)fluoranthene	3.65 U	29.9
Fluoranthene	3.65 U	119
Indeno(1,2,3-cd)pyrene	3.65 U	3.76 U
Phenanthrene	3.65 U	93.6
Pyrene	3.65 U	96

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Notes:

J - Analyte present. Value may or may not be accurate or precise

U - The material was analyzed for, but not detected

UG/KG - Micrograms per kilogram

UJ - Analyte not detected, quantitation limit may be inaccurate

Shading indicates detection

Table 3
Camp Lejeune - UXO-17
Validated Subsurface Soil Detected Analytical Results
2008-2011

Station ID	ASR2_212-FR2-IS01		ASR2_212-FR2-IS02	ASR2_212-FR2-IS03	ASR2_212-FR2-IS04	MR17-IS01	MR17-IS02	MR17-IS03	MR17-IS04	MR17-IS05	MR17-IS
Sample ID	ASR2_212-FR2-IS01-3-5-08D	ASR2_212-FR2-IS01D-3-5-08D	ASR2_212-FR2-IS02-4-6-08D	ASR2_212-FR2-IS03-5-7-08D	ASR2_212-FR2-IS04-5-7-08D	MR17-IS01-2-4-10D	MR17-IS02-4-6-10D	MR17-IS03-3-5-10D	MR17-IS04-3-5-10D	MR17-IS05-1-3-10D	MR17-IS06-8-
Sample Date	10/07/08	10/07/08	10/07/08	10/07/08	10/08/08	12/04/10	12/04/10	12/04/10	12/04/10	12/04/10	12/04/1
Chemical Name											
Explosives (µg/kg)											
2,6-Dinitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	39.2 U	26.6 J	39.6 U	39.6 U	39.2 U	38.8
2-Amino-4,6-dinitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	39.2 U	38.5 U	39.6 U	39.6 U	39.2 U	38.8
4-Amino-2,6-dinitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	39.2 U	38.5 U	39.6 U	39.6 U	39.2 U	38.8
4-Nitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	39.2 U	38.5 U	39.6 U	39.6 U	39.2 U	38.8
Tetryl	1,200 R	1,200 R	1,200 R	1,200 R	1,200 R	39.2 U	28.5 J	26.4 J	33.5 J	39.2 U	38.8
Total Metals (mg/kg)											
Aluminum	NA	NA	NA	NA	NA	2,510	6,930	1,730	12,000	1,410	11,600
Arsenic	0.74 UJ	0.84 UJ	0.76 UJ	0.75 UJ	0.76 UJ	0.198 J	1.21	0.311 U	0.729	0.37 U	1.92
Barium	2.8 J	3.2 J	1.4 J	14.6 J	3.4 J	3.09	15.1	2.12	11	1.98 J	8.47
Beryllium	NA	NA	NA	NA	NA	0.113 U	0.158 J	0.104 U	0.142 J	0.123 U	0.156
Cadmium	0.07 U	0.08 U	0.08 U	0.08 UJ	0.08 U	0.113 U	0.129 J	0.104 U	0.113 U	0.123 U	0.123
Calcium	NA	NA	NA	NA	NA	440 J+	2,510 J+	104 U	113 U	123 U	457
Chromium	2.5 J	7.7 J	2.3	12.4	3.3	2.6 J+	15.3 J+	2.1 J+	12.7 J+	1.47 J+	10.7
Cobalt	NA	NA	NA	NA	NA	0.566 U	0.397 J	0.518 U	0.564 U	0.616 U	0.617
Copper	NA	NA	NA	NA	NA	0.398 J	1.66	0.409 J	1.73	0.466 J	1.09
Iron	NA	NA	NA	NA	NA	345	6,590	209	1,910	245	2,110
Lead	2.3	3.1	2.6	6.1	2.4	2.59	6.59	1.97	4.74	1.76	5.44
Magnesium	NA	NA	NA	NA	NA	170 U	309 J+	155 U	283 J+	185 U	308
Manganese	NA	NA	NA	NA	NA	0.936	9.13	0.945	4.45	0.806 J	4.48
Mercury	0.018 UJ	0.019 UJ	0.02 UJ	0.018 UJ	0.018 UJ	0.0271 J	0.0196 J	0.017 J	0.0318 U	0.0401 U	0.0405
Nickel	NA	NA	NA	NA	NA	0.805	1.68	0.366 J	1.08	0.335 J	1.1
Potassium	NA	NA	NA	NA	NA	170 U	239 J+	155 U	466 J+	185 U	477
Selenium	0.47 UJ	0.53 UJ	0.48 UJ	0.48 UJ	0.48 UJ	0.283 U	0.66	0.259 U	0.309 U	0.308 U	0.388
Vanadium	NA	NA	NA	NA	NA	2.45	15.7	1.45	13.2	1.24	10.9
Zinc	NA	NA	NA	NA	NA	1.25	6.97	0.729 U	2.91	1.18 U	3.52
Wet Chemistry											
% Solids (pct)	89.9	91	80.8	83.6	77.1	NA	NA	NA	NA	NA	NA

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Notes:

Shading indicates detections

NA - Not analyzed
J - Analyte present, value may or may not be accurate or precise
J+ - Analyte present, value may be biased high, actual value may be lower
N - Tentative Identification, consider present, special methods may be needed to confirm its presence or absence in future sampling efforts
R - Unreliable Result
U - The material was analyzed for, but not detected
UJ - Analyte not detected, quantitation limit may be inaccurate
mg/kg - Milligrams per kilogram
pct - Percent
µg/kg - Micrograms per kilogram

Table 3
Camp Lejeune - UXO-17
Validated Subsurface Soil Detected Analytical Results
2008-2011

Station ID	06	MR17-IS07		MR17-IS08	MR17-IS09/TW09	MR17-IS10/TW10	MR17-IS11/TW11	MR17-IS12/TW12	MR17-IS13/TW13	MR17-IS14/TW14		MR17-IS15/TW15
Sample ID	10-10D	MR17-IS07-5-7-10D	MR17-IS07D-5-7-10D	MR17-IS08-6-8-10D	MR17-IS09-3-5-10D	MR17-IS10-3-5-10D	MR17-IS11-4-6-10D	MR17-IS12-5-7-10D	MR17-IS13-5-7-10D	MR17-IS14-6-8-10D	MR17-IS14D-6-8-10D	MR17-IS15-1-3-10D
Sample Date	0	12/04/10	12/04/10	12/04/10	12/01/10	12/01/10	12/02/10	12/02/10	12/03/10	12/03/10	12/03/10	12/02/10
Chemical Name												
Explosives (µg/kg)												
2,6-Dinitrotoluene	U	39.6 U	39.6 U	40 U	38.5 U	38.8 U	39.6 U	40 U	40 U	40 U	40 U	40 U
2-Amino-4,6-dinitrotoluene	U	46.7 J	39.6 U	40 U	38.5 U	38.8 U	39.6 U	40 U	40 U	40 U	40 U	40 U
4-Amino-2,6-dinitrotoluene	U	33 J	39.6 U	40 U	38.5 U	38.8 U	39.6 U	40 U	40 U	40 U	40 U	40 U
4-Nitrotoluene	U	100 N	39.6 U	40 U	38.5 U	38.8 U	39.6 U	40 U	40 U	40 U	40 U	40 U
Tetryl	U	39.6 U	39.6 U	40 U	38.5 U	38.8 U	27.7 J	40 U	40 U	40 U	40 U	40 U
Total Metals (mg/kg)												
Aluminum		5,430	9,110	12,300	4,500	3,100	5,440	5,130	11,800	8,700	13,700	2,370
Arsenic		1.4	1.11	0.752	0.599	0.33 U	0.518 J	0.419 J	2.98	0.625	1.08	0.409 J
Barium		7.1	8.58	10.7	2.43	3.41	8.6	9.66	13.5	7.81	13.2	6.41
Beryllium	J	0.107 J	0.193 J	0.174 J	0.113 U	0.11 U	0.0656 J	0.0743 J	0.167 J	0.172 J	0.239 J	0.114 U
Cadmium	U	0.117 U	0.123 U	0.126 U	0.106 J	0.11 U	0.115 U	0.116 U	0.118 U	0.064 J	0.123 U	0.114 U
Calcium	J+	117 U	123 U	108 J+	113 U	110 U	115 J-	300 J-	85.1 J	121 U	123 U	287
Chromium	J+	14.9 J+	9.24 J+	11.7 J+	3.34	2.5	6.35	4.71	15.8	10.3	16.3	2.92
Cobalt	U	0.585 U	0.613 U	0.631 U	0.566 U	0.55 U	0.576 U	0.454 J	0.37 J	0.386 J	0.428 J	0.572 U
Copper		1.13	1.21	1.59	0.299 J	0.444 J	0.355 J	1.02	1.95	1.28	1.64	0.78
Iron		3,170	2,600	2,310	1,740	215	827	754	3,010	2,030	3,150	942
Lead		3.84	4.68	5.66	3.84	3.31	4.2	3.64	5.32	4.26	6.57	2.49
Magnesium	J+	154 J+	245 J+	314 J+	170 U	165 U	156 J+	210 J+	355	262 J	428	84.9 J
Manganese		6.13	3.99	4.76	1.27	0.956	2.42	5.48	4.75	4.85	6.01	3.01
Mercury	U	0.0381 U	0.0334 U	0.0373 U	0.0343 U	0.0261 J	0.029 J	0.0355 U	0.0358 U	0.0381 U	0.0372 U	0.0336 U
Nickel		0.901	0.828	1.08	1.03	0.551	0.764	1.27	1.49	0.847	1.24	0.708
Potassium	J+	257 J+	401 J+	529 J+	170 U	165 U	132 J+	180 J+	588	356	577	73.9 J
Selenium	U	0.293 U	0.307 U	0.316 U	0.235 J	0.328 J	0.288 U	0.29 U	0.484 U	0.303 U	0.309 U	0.286 U
Vanadium		10.2	21.9	15.5	4.56	2.55	7.36	5.35	18.4	15.3	23.8	3.86
Zinc		2.57	3.48	4.15	0.873 J	1.36	1.76	2.24	3.97	5.85	6.98	1.62
Wet Chemistry												
% Solids (pct)		NA	NA	NA	NA	0.542 U	0.566 U	0.565 U	NA	NA	NA	NA

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Notes:

- Shading indicates detections
- NA - Not analyzed

J - Analyte present, value may or may not be accurate or precise

J+ - Analyte present, value may be biased high, actual value may be lower

N - Tentative Identification, consider present, special methods may be needed to confirm its presence or absence in future sampling efforts

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

mg/kg - Milligrams per kilogram

pct - Percent

µg/kg - Micrograms per kilogram

Table 4
Camp Lejeune - UXO-17
Sediment Detected Analytical Results
December 2010

Station ID	MR17-SW/SD01
Sample ID	MR17-SD01-10D
Sample Date	12/03/10
Chemical Name	
Explosives (µg/kg)	
Perchlorate	1.04 J
Total Metals (mg/kg)	
Aluminum	10,800
Arsenic	1.85
Barium	25.7
Beryllium	0.21 J
Cadmium	0.375
Calcium	11,800
Chromium	12.3
Cobalt	1.19
Copper	4.29
Iron	5,160
Lead	13.2
Magnesium	544
Manganese	16.9
Mercury	0.0501
Nickel	4.17
Potassium	438
Vanadium	17.4
Zinc	26.7

Notes:

Shading indicates detections

J - Analyte present, value may or may not be accurate or precise

mg/kg - Milligrams per kilogram

µg/kg - Micrograms per kilogram

Table 5
Camp Lejeune - UXO-17
Surface Water Exceedance Results
December 2010

Station ID	NC2B-SW-Human Health & Water Supply 1	NRWQC-Human Health - Organisms & Water + Organisms 2	Adjusted Tap Water RSLs 0511	MR17-SW/SD01
Sample ID				MR17-SW01-10D
Sample Date				12/03/10
Chemical Name				
Explosives (µg/l)				
Perchlorate	--	--	2.6	42.1
Tetryl	--	--	15	0.14 J
Total Metals (µg/l)				
Aluminum	--	--	3,700	103
Barium	1,000	1,000	730	8.64 J
Cadmium	--	5	1.8	0.338 J
Calcium	--	--	--	42,200
Copper	--	1,300	150	1.01 J
Iron	--	300	2,600	73.3
Magnesium	--	--	--	1,820
Manganese	200	50	88	3.82
Potassium	--	--	--	3,950
Sodium	--	--	--	3,650
Zinc	--	7,400	1,100	1.84 J
Dissolved Metals (µg/l)				
Aluminum, Dissolved	--	--	3,700	39.4 J
Barium, Dissolved	1,000	1,000	730	8.42 J
Calcium, Dissolved	--	--	--	38,700
Iron, Dissolved	--	300	2,600	28.3
Lead, Dissolved	--	--	15	0.472 J
Magnesium, Dissolved	--	--	--	1,740
Manganese, Dissolved	200	50	88	2.93 J
Potassium, Dissolved	--	--	--	3,690
Sodium, Dissolved	--	--	--	3,490
Zinc, Dissolved	--	7,400	1,100	1.6 J

Notes:

Bold box indicates exceedance of NC2B-SW-Human Health + Water Supply

Underline text indicates exceedance of NRWQC-Human Health - Water+ Organisms

Bold text indicates exceedance of Adjusted Tap Water RSLs

RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents

1 - NC2B-SW-Human Health and NC2B-SW-Water Supply were combined to show the most conservative criteria

2 - NRWQC-Human Health - Water+ Organisms and NRWQC-Human Health Organisms were combined to show the most conservative criteria

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

µg/l - Micrograms per liter

Table 6
Camp Lejeune - UXO-17
Validated Groundwater Detected Analytical Results
2008 through 2011

Station ID	ASR2_212-FR2-TW01		ASR2_212-FR2-TW02	ASR2_212-FR2-TW03	ASR2_212-FR2-TW04	MR17-IS09/TW09	MR17-IS10/TW10	MR17-IS11/TW11	MR17-IS12/TW12	MR17-IS13/TW13	MR17-IS14/TW14	MR17-IS15/TW15	
Sample ID	ASR2_212-FR2-TW01D-08D	ASR2_212-FR2-TW01-08D	ASR2_212-FR2-TW02-08D	ASR2_212-FR2-TW03-08D	ASR2_212-FR2-TW04-08D	MR17-MW09-10D	MR17-MW10-10D	MR17-MW11-10D	MR17-MW12-10D	MR17-MW13-10D	MR17-MW14-10D	MR17-MW15-10D	MR17-MW15D-10D
Sample Date	10/09/08	10/09/08	10/09/08	10/09/08	10/09/08	12/05/10	12/06/10	12/06/10	12/06/10	12/06/10	12/06/10	12/05/10	12/05/10
Chemical Name													
Semivolatile Organic Compounds (µg/l)													
2,4-Dinitrotoluene	5 U	5 U	5 U	5 U	5 U	0.15 U	0.111 J	0.16 U	0.168 U	0.168 U	0.16 U	0.16 U	0.157 U
Explosives (µg/l)													
2-Nitrotoluene	5 U	5 U	5 U	5 U	5 U	0.15 U	0.189 J	0.16 U	0.168 U	0.168 U	0.16 U	0.16 U	0.157 U
3-Nitrotoluene	5 U	5 U	5 U	5 U	5 U	0.15 U	0.113 J	0.16 U	0.168 U	0.168 U	0.16 U	0.42 U	0.282 U
Perchlorate	0.2 U	0.2 U	0.2 U	0.2 U	0.47	0.2 U	0.2 U	0.199 J	0.0879 J	0.101 J	0.0936 J	0.2 U	0.2 U
RDX	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.14 J	0.154 U	0.16 U	0.168 U	0.115 J	0.16 U	0.16 U	0.157 U
Tetryl	5 U	5 U	5 U	5 U	5 U	0.15 U	0.289 J	0.16 U	0.168 U	0.168 U	0.16 U	0.16 U	0.157 U
Total Metals (µg/l)													
Aluminum	NA	NA	NA	NA	NA	702 J-	295 J-	230 J-	2,000 J-	1,280 J-	136 J-	251 J-	258 J-
Barium	21.7 J	29.8 J	14.8 J	41.4 J	54.5 J	20.3	33	20.9	33.3	59.4	81	51.1	50.1
Beryllium	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.261 J	0.5 U	0.5 U
Calcium	NA	NA	NA	NA	NA	1,340	10,800	2,260	28,900	8,760	1,930	18,100	17,200
Chromium	10 U	10.4	10 U	0.8 U	10 U	1.93 J	0.643 J	1 U	5.22	1 U	1 U	0.943 J	0.839 J
Cobalt	NA	NA	NA	NA	NA	2.5 U	1.28 J	2.5 U	2.5 U	2.5 U	4.3	2.5 U	2.5 U
Copper	NA	NA	NA	NA	NA	2 U	2 U	2 U	2.51	2 U	2 U	2 U	2 U
Iron	NA	NA	NA	NA	NA	208 J-	48 J-	65.6 J-	345 J-	47.3 J-	177 J-	675 J-	723 J-
Lead	2.8 UJ	4.1 J	2.8 U	2.8 U	2.8 U	0.577 J	0.75 U	0.75 U	1.3	1.22	0.75 U	0.75 U	0.481 J
Magnesium	NA	NA	NA	NA	NA	492 J	648 J	748 J	3,460	3,120	2,000	2,870	2,880
Manganese	NA	NA	NA	NA	NA	13.5	36.9	16.6	80.8	5.13	43.9	73.8	74.5
Nickel	NA	NA	NA	NA	NA	1.41 J	2.7	1.5 U	2.13 J	0.782 J	6.05	0.924 J	0.865 J
Potassium	NA	NA	NA	NA	NA	435 J	571 J	395 J	3,660	1,310	1,380	1,890	1,890
Selenium	4.3 U	4.3 U	4.3 U	6.9 J	4.3 U	1.25 U	1.25 U	1.25 U	0.92 J	1.25 U	1.25 U	1.25 U	1.25 U
Sodium	NA	NA	NA	NA	NA	1,940	5,980	3,690	4,730	9,010	8,070	6,360	6,170
Vanadium	NA	NA	NA	NA	NA	2.5 U	2.5 U	2.5 U	4.33	2.5 U	2.5 U	3.85	4.2
Zinc	NA	NA	NA	NA	NA	41.5 J-	3.35 J-	3.03 J-	1.49 J-	2.95 J-	11.5 J-	2.5 J-	2.5 J-
Dissolved Metals (µg/l)													
Aluminum, Dissolved	NA	NA	NA	NA	NA	NA	141 J-	124 J-	179 J-	NA	NA	NA	NA
Barium, Dissolved	NA	NA	NA	NA	NA	NA	31.2	24.3	30.1	NA	NA	NA	NA
Calcium, Dissolved	NA	NA	NA	NA	NA	NA	11,100	2,810	29,600	NA	NA	NA	NA
Chromium, Dissolved	NA	NA	NA	NA	NA	NA	0.616 J	0.642 J	1.53 J	NA	NA	NA	NA
Copper, Dissolved	NA	NA	NA	NA	NA	NA	2 U	2 U	2.57	NA	NA	NA	NA
Iron, Dissolved	NA	NA	NA	NA	NA	NA	17.3 J-	46.6 J-	31.6 J-	NA	NA	NA	NA
Lead, Dissolved	NA	NA	NA	NA	NA	NA	0.75 U	0.75 U	0.492 J	NA	NA	NA	NA
Magnesium, Dissolved	NA	NA	NA	NA	NA	NA	670 J	905 J	3,430	NA	NA	NA	NA
Manganese, Dissolved	NA	NA	NA	NA	NA	NA	30.4	18.7	78	NA	NA	NA	NA
Nickel, Dissolved	NA	NA	NA	NA	NA	NA	2.35 J	1.22 J	1.19 J	NA	NA	NA	NA
Potassium, Dissolved	NA	NA	NA	NA	NA	NA	526 J	481 J	3,530	NA	NA	NA	NA
Selenium, Dissolved	NA	NA	NA	NA	NA	NA	1.25 U	0.825 J	1.25 U	NA	NA	NA	NA
Sodium, Dissolved	NA	NA	NA	NA	NA	NA	6,030	4,350	4,800	NA	NA	NA	NA
Vanadium, Dissolved	NA	NA	NA	NA	NA	NA	2.5 U	2.5 U	2.39 J	NA	NA	NA	NA
Zinc, Dissolved	NA	NA	NA	NA	NA	NA	3.47 J-	3.22 J-	2.5 UJ	NA	NA	NA	NA
Wet Chemistry													

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Notes:

Shading indicates detections

NA - Not analyzed
J - Analyte present, value may or may not be accurate or precise
J- - Analyte present, value may be biased low, actual value may be higher

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate
µg/l - Micrograms per liter

Table 7
Camp Lejeune - UXO-17
Validated Groundwater Detected Analytical Results
July 2011

Sample ID	MR17-GW09-11C	MR17-GW11-11C	MR17-GW13-11C	MR17-GW14-11C	MR17-GW15-11C	MR17-GW16-11C	MR17-GW17-11C	MR17-GW17D-11C	MR17-GW18-11C
Sample Date	7/28/11	7/28/11	7/29/11	7/29/11	7/29/11	7/29/11	7/26/11	7/26/11	7/26/11
Chemical Name									
Volatile Organic Compounds (UG/L)									
Carbon disulfide	2 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Toluene	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Semivolatile Organic Compounds (UG/L)									
No Detections									

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Notes:

- J - Analyte present. Value may or may not be accurate or precise
- U - The material was analyzed for, but not detected
- UG/L - Micrograms per liter
- Shading indicates detection

Station ID	ASR2_212-FR2-DU01			ASR2_212-FR2-DU02			
Sample ID	ASR2_212-FR2-DU01-SS01-08D	ASR2_212-FR2-DU01-SS02-08D	ASR2_212-FR2-DU01-SS03-08D	ASR2_212-FR2-DU02-SS01D-08D	ASR2_212-FR2-DU02-SS01-08D	ASR2_212-FR2-DU02-SS02-08D	ASR2_212-FR2-DU02-SS03-08D
Sample Date	10/06/08	10/06/08	10/06/08	10/06/08	10/06/08	10/06/08	10/06/08
Chemical Name							
Semivolatle Organic Compounds (µg/kg)							
2,4-Dinitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U
2,6-Dinitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U
Nitrobenzene	620 U	620 U	620 U	620 U	620 U	620 U	620 U
Explosives (µg/kg)							
1,3,5-Trinitrobenzene	620 UJ	620 UJ	620 UJ	620 UJ	620 UJ	620 UJ	620 UJ
1,3-Dinitrobenzene	620 U	620 U	620 U	620 U	620 U	620 U	620 U
2,4,6-Trinitrotoluene	620 U	620 U	620 U	620 U	620 U	620 U	620 U
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U
2-Nitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U
3-Nitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U
4-Amino-2,6-dinitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U
4-Nitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U
HMX	620 U	620 U	620 U	620 U	620 U	620 U	620 U
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	NA	NA	NA	NA	NA	NA	NA
Perchlorate	2.1 U	2.2 U	2.2 U	2.3 U	2.3 U	2.4 U	2.4 U
PETN	NA	NA	NA	NA	NA	NA	NA
RDX	620 U	620 U	620 U	620 U	620 U	620 U	620 U
Tetryl	1,200 R	1,200 R	1,200 R	1,200 R	1,200 R	1,200 R	1,200 R
Total Metals (mg/kg)							
Aluminum	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.71 UJ	0.71 UJ	0.74 UJ	0.69 UJ	0.76 UJ	0.8 UJ	0.81 UJ
Barium	4.9 J	4.8 J	6.2 J	7 J	6.5 J	7.8 J	6.4 J
Beryllium	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.07 U	0.07 U	0.07 U	0.07 U	0.08 U	0.08 U	0.08 U
Calcium	NA	NA	NA	NA	NA	NA	NA
Chromium	2.6	2.8	2.5	3.8	3.8	4.3	3.8
Cobalt	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA	NA	NA
Lead	4.6	4.3	4.1	6.6	6.6	7.2	6
Magnesium	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	NA	NA
Mercury	0.017 UJ	0.018 UJ	0.018 UJ	0.022 J	0.023 J	0.022 J	0.02 UJ
Nickel	NA	NA	NA	NA	NA	NA	NA
Potassium	NA	NA	NA	NA	NA	NA	NA
Selenium	0.45 UJ	0.45 UJ	0.47 UJ	0.44 UJ	0.48 UJ	0.51 UJ	0.51 UJ
Silver	0.15 U	0.15 U	0.15 U	0.14 U	0.16 U	0.17 U	0.17 U
Sodium	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA
Wet Chemistry							
% Solids (pct)	93.1	92.4	91.2	88.8	87.9	82.5	84.4

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Notes:

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mg/kg - Milligrams per kilogram

pct - Percent

µg/kg - Micrograms per kilogram

Camp Lejeune - UXO-17
Validated Surface Soil Raw Analytical Results
2008 - 2011

Station ID	ASR2_212-FR2-DU03			MR17-DU01			MR17-DU02			
Sample ID	ASR2_212-FR2-DU03-SS01-08D	ASR2_212-FR2-DU03-SS02-08D	ASR2_212-FR2-DU03-SS03-08D	MR17-DU01-SS01-10D	MR17-DU01-SS02-10D	MR17-DU01-SS03-10D	MR17-DU02D-SS03-10D	MR17-DU02-SS01-10D	MR17-DU02-SS02-10D	MR17-DU02-SS03-10D
Sample Date	10/06/08	10/06/08	10/06/08	11/30/10	11/30/10	11/30/10	11/30/10	11/30/10	11/30/10	11/30/10
Chemical Name										
Semivolatile Organic Compounds (µg/kg)										
2,4-Dinitrotoluene	1,200 U	1,200 U	1,200 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
2,6-Dinitrotoluene	1,200 U	1,200 U	1,200 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
Nitrobenzene	620 U	620 U	620 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
Explosives (µg/kg)										
1,3,5-Trinitrobenzene	620 UJ	620 UJ	620 UJ	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
1,3-Dinitrobenzene	620 U	620 U	620 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
2,4,6-Trinitrotoluene	620 U	620 U	620 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	1,200 U	1,200 U	1,200 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
2-Nitrotoluene	1,200 U	1,200 U	1,200 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
3-Nitrotoluene	1,200 U	1,200 U	1,200 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
4-Amino-2,6-dinitrotoluene	1,200 U	1,200 U	1,200 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
4-Nitrotoluene	1,200 U	1,200 U	1,200 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
HMX	620 U	620 U	620 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	NA	NA	NA	200 U	196 U	200 U	200 U	198 U	198 U	196 U
Perchlorate	2.4 U	2.4 U	2.4 U	1.21 J	2.09 U	2.08 U	2.27 U	2.14 U	2.25 U	2.13 U
PETN	NA	NA	NA	200 U	196 U	200 U	200 U	198 U	198 U	196 U
RDX	620 U	620 U	620 U	40 U	39.2 U	40 U	40 U	39.6 U	39.6 U	39.2 U
Tetryl	1,200 R	1,200 R	1,200 R	40 U	39.2 U	40 U	40 U	270 U	39.6 U	39.2 U
Total Metals (mg/kg)										
Aluminum	NA	NA	NA	1,550	3,410	2,860	6,890	6,760	6,220	5,840
Antimony	NA	NA	NA	0.424 U	0.397 U	10.3 U	0.451 U	0.426 U	0.448 U	0.434 U
Arsenic	0.74 UJ	0.79 UJ	0.77 UJ	1.84	1.85	7.69 U	0.688	0.528 J	0.667	0.523 J
Barium	7.8 J	7.9 J	7.5 J	3.34	4.32	12.8 U	15.2	13.3	14.2	13.1
Beryllium	NA	NA	NA	0.104 J	0.107 J	2.56 U	0.0918 J	0.0899 J	0.0842 J	0.0809 J
Cadmium	0.07 U	0.08 U	0.08 U	0.485	0.353	1.5 J	0.091 J	0.0866 J	0.0996 J	0.0867 J
Calcium	NA	NA	NA	112,000	78,700	158,000	267 J	221 J	539	284
Chromium	4.5	4.3	4.7	3.39	4.03	5.06 J	6.57	6.58	6.24	5.67
Cobalt	NA	NA	NA	2.4	2.33	12.8 U	0.426 J	0.382 J	0.374 J	0.33 J
Copper	NA	NA	NA	1.18	1.39	10.3 U	1.35	1.5	1.76	1.34
Iron	NA	NA	NA	1,920	1,940	2,800	1,870	1,660	1,670	1,600
Lead	6	5.4	6.7	2.31	2.46	3.84 U	6.2	4.71	5.42	6.48
Magnesium	NA	NA	NA	1,440	1,060	2,220 J	278 J	273	241 J	228 J
Manganese	NA	NA	NA	103	74	186	5.25	4.82	5.37	4.68
Mercury	0.018 UJ	0.018 UJ	0.019 UJ	0.0266 U	0.0194 J	0.0247 J	0.0161 J	0.024 J	0.0198 J	0.0239 J
Nickel	NA	NA	NA	11.4	11.1	16	1.52	1.41	1.43	1.26
Potassium	NA	NA	NA	337	335	459	172 J	164 J	158 J	142 J
Selenium	0.47 UJ	0.5 UJ	0.49 UJ	0.331 J	0.289 J	6.41 U	0.274 J	0.266 U	0.28 U	0.25 J
Silver	0.15 U	0.16 U	0.16 U	0.106 U	0.0993 U	2.56 U	0.113 U	0.106 U	0.112 U	0.109 U
Sodium	NA	NA	NA	62 J	60 J	3,840 U	169 U	160 U	168 U	163 U
Thallium	NA	NA	NA	0.212 U	0.199 U	5.13 U	0.226 U	0.213 U	0.224 U	0.217 U
Vanadium	NA	NA	NA	3.61	5.07	12.8 U	7.89	6.95	7.24	6.8
Zinc	NA	NA	NA	10.3	8.92	11.2 J	3.88	3.27	4.03	3.56
Wet Chemistry										
% Solids (pct)	83	84.7	83.9	NA	NA	NA	NA	NA	NA	NA

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pct - Percent
µg/kg - Micrograms per kilogram

Camp Lejeune - UXO-17
Validated Surface Soil Raw Analytical Results
2008 - 2011

Station ID	MR17-DU03			MR17-SS01	MR17-SS02	MR17-SS03	MR17-SS04	MR17-SS05	MR17-SS06	MR17-SS07	MR17-SS08		MR17-SS09	MR17-SS10	MR17-SS11		MR17-SS12
Sample ID	MR17-DU03-SS01-10D	MR17-DU03-SS02-10D	MR17-DU03-SS03-10D	MR17-SS01-10D	MR17-SS02-10D	MR17-SS03-10D	MR17-SS04-10D	MR17-SS05-10D	MR17-SS06-10D	MR17-SS07-10D	MR17-SS08-10D	MR17-SS08D-10D	MR17-SS09-10D	MR17-SS10-10D	MR17-SS11-10D	MR17-SS11D-10D	MR17-SS12-10D
Sample Date	11/30/10	11/30/10	11/30/10	12/01/10	12/01/10	12/01/10	12/01/10	12/01/10	12/01/10	12/01/10	12/01/10	12/01/10	12/01/10	12/02/10	12/01/10	12/01/10	12/02/10
Chemical Name																	
Semivolatile Organic Compounds (µg/kg)																	
2,4-Dinitrotoluene	39.6 U	39.6 U	39.2 U	40 U	38.5 U	40 U	38.5 U	39.2 U	39.6 U	40 U	38.5 U	40 U	38.8 U	40 UJ	39.6 U	38.8 U	40 UJ
2,6-Dinitrotoluene	39.6 U	39.6 U	39.2 U	40 U	38.5 U	40 U	38.5 U	39.2 U	39.6 U	40 U	38.5 U	32.7 J	38.8 U	24.5 J	39.6 U	38.8 U	40 U
Nitrobenzene	39.6 U	39.6 U	39.2 U	40 U	38.5 U	40 U	38.5 U	39.2 U	39.6 U	40 U	38.5 U	40 U	38.8 U	40 U	39.6 U	38.8 U	40 U
Explosives (µg/kg)																	
1,3,5-Trinitrobenzene	39.6 U	39.6 U	232 U	40 U	38.5 U	40 U	38.5 U	39.2 U	39.6 U	40 U	38.5 U	40 U	38.8 U	40 U	39.6 U	38.8 U	40 U
1,3-Dinitrobenzene	39.6 U	39.6 U	39.2 U	40 U	38.5 U	40 U	38.5 U	39.2 U	39.6 U	40 U	38.5 U	40 U	38.8 U	37.5 J	39.6 U	38.8 U	32 J
2,4,6-Trinitrotoluene	39.6 U	39.6 U	39.2 U	40 U	38.5 U	40 U	150 N	39.2 U	39.6 U	40 U	215 N	47.4 U	38.8 U	40 UJ	39.6 U	38.8 U	40 UJ
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Amino-4,6-dinitrotoluene	39.6 U	39.6 U	144 U	40 U	38.5 U	40 U	38.5 U	39.2 U	39.6 U	40 U	38.5 U	40 U	38.8 U	75.1 U	39.6 U	75.9 U	40 U
2-Nitrotoluene	39.6 U	39.6 U	50.2 U	40 U	38.5 U	40 U	38.5 U	39.2 U	83.5 U	40 U	38.5 U	40 U	38.8 U	40 U	123 N	131 N	40 U
3-Nitrotoluene	39.6 U	39.6 U	39.2 U	40 U	38.5 U	40 U	55.9 U	39.2 U	23.9 J	40 U	38.5 U	40 U	107 U	40 U	39.6 U	38.8 U	40 U
4-Amino-2,6-dinitrotoluene	39.6 U	39.6 U	39.2 U	40 U	38.5 U	40 U	38.5 U	39.2 U	39.6 U	40 U	38.5 U	40 U	38.8 U	40 U	39.6 U	38.8 U	40 U
4-Nitrotoluene	39.6 U	39.6 U	365 U	40 U	38.5 U	40 U	38.5 U	39.2 U	39.6 U	40 U	38.5 U	40 U	38.8 U	40 U	39.6 U	38.8 U	40 U
HMX	39.6 U	39.6 U	138 U	40 U	38.5 U	40 U	38.5 U	39.2 U	39.6 U	40 U	38.5 U	40 U	38.8 U	40 U	39.6 U	38.8 U	40 U
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin	198 U	198 U	196 U	200 U	192 U	200 U	192 U	196 U	198 U	200 U	235 U	203 J	194 U	200 U	261 J	194 U	200 U
Perchlorate	8.07	2.19 U	2.19 U	2.19 U	2.29 U	2.16 U	2.16 U	2.55 U	2.33 U	2.52 U	2.42 U	2.52 U	2.17 U	2.36 U	2.23 U	2.21 U	2.35 U
PETN	198 U	198 U	196 U	200 U	192 U	200 U	192 U	196 U	198 U	200 U	192 U	107 J	194 U	200 U	198 U	194 U	200 U
RDX	55 U	39.6 U	374 J	56.8 J	38.5 U	40 U	52.7 U	39.2 U	39.6 U	40 U	646 U	40 U	63 U	40 U	39.6 U	38.8 U	40 U
Tetryl	39.6 U	39.6 U	39.2 U	40 U	38.5 U	40 U	38.5 U	39.2 U	43.7 U	40 U	168 U	40 U	38.8 U	40 U	39.6 U	38.8 U	40 U
Total Metals (mg/kg)																	
Aluminum	3,820	3,980	2,470	995	792	119	603	2,130	322	6,340	490	457	4,240	2,330	165	147	6,060
Antimony	0.456 U	0.42 U	0.433 U	0.431 R	0.471 R	0.421 R	0.445 U	0.495 U	0.466 U	0.498 R	0.486 U	0.515 U	0.428 U	0.474 U	0.444 U	0.431 U	0.473 R
Arsenic	0.82	0.663	0.567	0.188 J	0.353 U	0.316 U	0.334 U	0.271 J	0.236 J	1.93	0.365 U	0.211 J	0.791	0.525 J	0.333 U	0.323 U	1.05
Barium	11.5	11.3	8.55	2.05 J	3.31	0.75 J	1.19 J	3.87	8.57	15.1	3.05	7.57	6.42	5.88	1.08 J	1.02 J	10.3
Beryllium	0.08 J	0.0743 J	0.108 U	0.108 U	0.118 U	0.0555 J	0.111 U	0.124 U	0.117 U	0.204 J	0.122 U	0.129 U	0.073 J	0.119 U	0.111 U	0.108 U	0.0737 J
Cadmium	0.228 J	0.0964 J	0.108 J	0.115 U	0.15 U	0.105 U	0.111 U	0.124 U	0.112 J	0.885	0.104 J	0.133 J	0.107 U	0.119 U	0.0858 J	0.0923 J	0.118 U
Calcium	3,820	504	540	510 J-	2,640 J-	21,800 J-	167 J+	389 J+	460 J+	26,100 J-	305 J+	787 J+	108 J+	687	133 J+	102 J+	259 J
Chromium	5.39	4.4	3.07	1.03	1.13	0.411 J	0.73	2.27	0.641	8.73	0.973	0.94	4.88	3	0.512 J	0.506 J	6.48
Cobalt	0.569 U	0.525 U	0.541 U	0.539 U	0.588 U	0.526 U	0.556 U	0.619 U	0.583 U	1.15	0.608 U	0.644 U	0.535 U	0.593 U	0.555 U	0.539 U	0.591 U
Copper	2.07	1.08	0.955	0.508 J	0.92	0.421 U	0.399 J	0.629	1.35	4.74	0.505 J	1.2	0.447 J	0.763	1.18	1	1.13
Iron	1,990	1,770	1,340	220	422	78.8	166	356	227	3,250	271	266	1,750	830	117	108	3,810
Lead	12.7	8.52	5.84	3.04	3.36	2.06	2.1	2.68	12.2	13.5	3.1	6.13	3.74	3.17	2.69	2.47	5.31
Magnesium	206 J	137 J	105 J	62.9 J+	141 J+	158 U	167 U	69.4 J	175 U	478 J+	182 U	66.1 J	111 J	96.6 J	166 U	162 U	165 J+
Manganese	9.47	5.43	5.71	4.27	10.6	40.3	2.82	1.86	2.82	48.2	2.69	4.87	2.71	9.96	2.71	2.26	2.98
Mercury	0.02 J	0.0193 J	0.0171 J	0.0158 J	0.0145 J	0.0314 U	0.0324 U	0.0421 U	0.0348 J	0.0381	0.0172 J	0.0302 J	0.0175 J	0.0138 J	0.015 J	0.0138 J	0.0267 J
Nickel	1.05	0.768	0.544	0.261 J	0.757	0.316 U	0.334 U	0.619 J	0.216 J	2.88	0.365 U	0.309 J	0.549	0.608	0.333 U	0.323 U	0.838
Potassium	112 J	110 J	99 J	162 U	76.5 J+	279 J+	167 U	75 J+	175 U	330 J+	72.3 J+	82.5 J+	182 J+	151 J	166 U	162 U	136 J+
Selenium	0.187 J	0.29 J	0.263 J	0.267 J	0.182 J	0.263 U	0.278 U	0.248 J	0.301 J	1.15	0.208 J	0.339 J	0.268 J	0.446 U	0.189 J	0.27 U	0.295 J
Silver	0.114 U	0.105 U	0.108 U	0.108 U	0.118 U	0.105 U	0.111 U	0.124 U	0.117 U	0.125 U	0.122 U	0.129 U	0.107 U	0.119 U	0.111 U	0.108 U	0.118 U
Sodium	171 U	157 U	162 U	162 U	176 U	158 U	167 U	186 U	175 U	187 U	182 U	193 U	160 U	178 U	166 U	162 U	177 U
Thallium	0.228 U	0.21 U	0.217 U	0.216 U	0.235 U	0.211 U	0.223 U	0.248 U	0.233 U	0.249 U	0.243 U	0.257 U	0.214 U	0.296 U	0.222 U	0.216 U	0.236 U
Vanadium	5.53	5.78	4.02	1.3	1.49	10.3	0.739	2.43	1.23	12.3	1.87	1.57	6.78	3.89	0.876	0.842	9.9
Zinc	18.9	3.7	3.46	1.82	4.99	0.611 J	1.51	1.98	1.7	34.7	1.75	2.77	1.9	5.54	1.64	1.4	2.36
Wet Chemistry																	
% Solids (pct)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Camp Lejeune - UXO-17
Validated Surface Soil Raw Analytical Results
2008 - 2011

Station ID	MR17-SS13	MR17-SS14	MR17-SS15	MR17-SS16	MR17-SS17	MR17-SS18	MR17-SS19	MR17-SS20		MR17-SS21
Sample ID	MR17-SS13-10D	MR17-SS14-10D	MR17-SS15-10D	MR17-SS16-10D	MR17-SS17-10D	MR17-SS18-10D	MR17-SS19-10D	MR17-SS20-11A	MR17-SS20P-11A	MR17-SS21-11A
Sample Date	12/02/10	12/02/10	12/02/10	12/02/10	12/02/10	12/02/10	12/02/10	3/30/11	3/30/11	3/30/11
Chemical Name										
Semivolatile Organic Compounds (µg/kg)										
2,4-Dinitrotoluene	40 U	127 J	40 U	40 UJ	516 J	40 U	40 UJ	NA	NA	NA
2,6-Dinitrotoluene	40 U	117 U	40 U	40 U	291 U	40 U	40 U	NA	NA	NA
Nitrobenzene	221 U	4,290 N	40 U	3,230 U	89	40 U	40 U	NA	NA	NA
Explosives (µg/kg)										
1,3,5-Trinitrobenzene	28 J	40 U	40 U	40 U	40 U	40 U	40 U	0.115 JMP	0.174 U	0.174 U
1,3-Dinitrobenzene	40 U	95.6 U	29.1 J	40 U	40 U	40 U	40 U	0.19 U	0.174 U	0.174 UN
2,4,6-Trinitrotoluene	40 UJ	40 UJ	40 UJ	40 UJ	40 UJ	36.4 J	40 UJ	0.19 U	0.174 U	0.174 U
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	0.19 U	0.174 U	0.174 U
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	0.19 U	0.174 U	0.174 U
2-Amino-4,6-dinitrotoluene	40 U	43.6 U	40 U	76.3 N	80.1 U	40 U	104 U	0.19 U	0.111 JMP	0.174 U
2-Nitrotoluene	40 U	40 U	40 U	40 U	67.4 J	40 U	40 U	0.19 U	0.174 U	0.174 U
3-Nitrotoluene	40 U	40 U	40 U	484 U	40 U	40 U	40 U	0.19 U	0.174 U	0.174 UN
4-Amino-2,6-dinitrotoluene	40 U	40 U	40 U	40 U	40 U	40 U	40 U	0.212 J	0.21 J	0.174 U
4-Nitrotoluene	134 J	70.3 J	40 U	40 U	352 U	40 U	40 U	0.19 U	0.174 U	0.174 UN
HMX	40 U	40 U	40 U	40 U	45.9 U	40 U	40 U	0.19 U	0.174 U	0.174 U
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	0.19 U	0.174 U	0.174 U
Nitroglycerin	200 U	200 U	200 U	200 U	206 J	200 U	200 U	0.476 U	0.435 U	0.435 U
Perchlorate	2.35 U	2.27 U	2.24 U	2.24 U	2.62 U	2.34 U	2.4 U	2.33 U	2.3 U	2.31 U
PETN	998	1,060	200 U	2,620 U	200 U	200 U	200 U	0.476 U	0.435 U	0.435 U
RDX	72.4 U	78.9	40 U	292 U	168 N	40 U	40 U	0.19 U	0.114 JP	0.174 U
Tetryl	152 U	1,060 U	40 U	113 U	40 U	40 U	40 U	0.19 U	0.174 U	0.174 U
Total Metals (mg/kg)										
Aluminum	2,410	2,740	3,250	2,270	6,050	2,220	2,150	4,030	3,970	4,330
Antimony	0.466 R	0.458 R	0.443 R	0.456 R	0.528 R	0.469 R	0.472 U	0.475 UN	0.466 UN	0.462 UN
Arsenic	0.591	0.577	0.806	0.562 J	1.35	0.478 J	0.481 J	1.09	1.06	1.19
Barium	10.9	7.79	8.12	9.52	16.9	4.49	8.01	12	10.9	10.3
Beryllium	0.116 U	0.115 U	0.0613 J	0.114 U	0.0931 J	0.117 U	0.118 U	0.0969 Y, J	0.101 Y, J	0.101 Y, J
Cadmium	0.185 U	0.143 U	0.112 U	0.143 U	0.206 J	0.117 U	0.118 U	0.0756 J	0.0663 J	0.115 U
Calcium	753 J-	655 J-	344 J-	589 J-	2,040 J-	166 J-	1,710	5,340 *	4,760 *	9,320 *
Chromium	2.8	4.39	4.07	2.05	6.72	3.14	2.7	4.68	4.69	5.57
Cobalt	0.582 U	0.573 U	0.554 U	0.571 U	0.395 J	0.587 U	0.59 U	0.593 U	0.583 U	0.577 U
Copper	1.15	0.981	0.709	1.07	2.7	0.684	3.51	1.93	1.72	1.8
Iron	1,500	1,540	1,890	1,090	3,680	1,330	1,320	2,710	2,580	3,210
Lead	5.72	11	5.55	10.3	7.85	3.81	4.21	9	8.61	6.2
Magnesium	124 J+	97.6 J+	107 J+	96.3 J+	229 J+	79.3 J+	96.7 J	251 JN	265 JN	546 N
Manganese	44.9	5.72	4.06	10.8	8.36	2.53	20	14.1	12.2	14
Mercury	0.0267 J	0.0236 J	0.0173 J	0.0233 J	0.0334 J	0.035 U	0.0165 J	0.0174 J	0.0176 J	0.0143 J
Nickel	0.602	0.589	0.483 J	0.428 J	1.34	0.319 J	0.64	1.12	1.08	1.19
Potassium	93.6 J+	101 J+	111 J+	72.2 J+	205 J+	88.2 J+	120 J	160 J	163 J	198 J
Selenium	0.215 J	0.267 J	0.342 J	0.315 J	0.389 J	0.279 J	0.392 U	0.284 J	0.215 J	0.289 U
Silver	0.116 U	0.115 U	0.111 U	0.114 U	0.132 U	0.117 U	0.118 U	0.119 U	0.117 U	0.115 U
Sodium	175 U	172 U	166 U	171 U	198 U	176 U	177 U	178 U	175 U	173 U
Thallium	0.233 U	0.229 U	0.221 U	0.228 U	0.264 U	0.235 U	0.295 U	0.237 U	0.233 U	0.231 U
Vanadium	4.61	4.78	6.29	3.05	10.8	4.93	3.99	7.55	6.54	8.16
Zinc	6.08	3.71	2.31	4.34	5	1.9	5.09	64.7	66.7	14.6
Wet Chemistry										
% Solids (pct)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Notes:

Shading indicates detections
NA - Not analyzed
J - Analyte present, value may or may not be accurate or precise
J- - Analyte present, value may be biased low, actual value may be higher
J+ - Analyte present, value may be biased high, actual value may be lower
N - Tentative Identification, consider present, special methods may be needed to confirm its presence or absence in future sampling efforts
R - Unreliable Result
U - The material was analyzed for, but not detected
UJ - Analyte not detected, quantitation limit may be inaccurate
mg/kg - Milligrams per kilogram
pct - Percent
µg/kg - Micrograms per kilogram

Camp Lejeune - UXO-17
Validated Surface Soil Raw Analytical Results
June 2011

Sample ID	MR17-SS22-11B	MR17-SS22D-11B
Sample Date	6/1/11	6/1/11
Chemical Name		
Volatile Organic Compounds (UG/KG)		
1,1,1-Trichloroethane	5.65 U	2.4 U
1,1,2,2-Tetrachloroethane	5.65 U	2.4 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	11.3 U	4.8 U
1,1,2-Trichloroethane	5.65 U	2.4 U
1,1-Dichloroethane	5.65 U	2.4 U
1,1-Dichloroethene	5.65 U	2.4 U
1,2,4-Trichlorobenzene	5.65 U	2.4 U
1,2-Dibromo-3-chloropropane	11.3 U	4.8 U
1,2-Dibromoethane	5.65 U	2.4 U
1,2-Dichlorobenzene	5.65 U	2.4 U
1,2-Dichloroethane	5.65 U	2.4 U
1,2-Dichloropropane	5.65 U	2.4 U
1,3-Dichlorobenzene	5.65 U	2.4 U
1,4-Dichlorobenzene	5.65 U	2.4 U
2-Butanone	11.3 U	4.8 U
2-Hexanone	5.65 U	2.4 U
4-Methyl-2-pentanone	5.65 U	2.4 U
Acetone	84.9 U	31.2 U
Benzene	5.65 U	2.4 U
Bromodichloromethane	5.65 U	2.4 U
Bromoform	5.65 UJ	2.4 UJ
Bromomethane	11.3 U	4.8 U
Carbon disulfide	5.65 U	2.4 U
Carbon tetrachloride	5.65 UJ	2.4 UJ
Chlorobenzene	5.65 U	2.4 U
Chloroethane	11.3 U	4.8 U
Chloroform	5.65 U	2.4 U
Chloromethane	11.3 U	4.8 U
cis-1,2-Dichloroethene	5.65 U	2.4 U
cis-1,3-Dichloropropene	5.65 UJ	2.4 UJ
Cyclohexane	5.65 U	2.4 U
Dibromochloromethane	5.65 U	2.4 U
Dichlorodifluoromethane (Freon-12)	11.3 U	4.8 U
Ethylbenzene	5.65 U	2.4 U
Isopropylbenzene	5.65 U	2.4 U
m- and p-Xylene	11.3 U	4.8 U
Methyl Acetate	11.3 U	4.8 U
Methylcyclohexane	5.65 U	2.4 U
Methylene chloride	11.3 U	4.8 U
Methyl-tert-Butyl Ether (MTBE)	5.65 U	2.4 U
o-Xylene	5.65 U	2.4 U
Styrene	5.65 U	2.4 U
Tetrachloroethene	5.65 U	2.4 U
Toluene	5.65 U	2.4 U
trans-1,2-Dichloroethene	5.65 U	2.4 U
trans-1,3-Dichloropropene	5.65 U	2.4 U
Trichloroethene	5.65 U	2.4 U
Trichlorofluoromethane (Freon-11)	11.3 U	4.8 U
Vinyl chloride	5.65 U	2.4 U
Xylene, Total	16.9 U	7.2 U
Semivolatile Organic Compounds (UG/KG)		
1,1-Biphenyl	183 U	188 U
1-Methylnaphthalene	3.65 U	3.76 U
2,2'-Oxybis(1-chloropropane)	183 UJ	188 UJ
2,4,5-Trichlorophenol	183 U	188 U
2,4,6-Trichlorophenol	183 U	188 U
2,4-Dichlorophenol	183 U	188 U
2,4-Dimethylphenol	731 UJ	752 UJ
2,4-Dinitrophenol	1830 U	1880 U
2,4-Dinitrotoluene	183 U	188 U
2,6-Dinitrotoluene	183 U	188 U
2-Chloronaphthalene	183 U	188 U
2-Chlorophenol	183 U	188 U
2-Methylnaphthalene	3.65 U	3.76 U

Camp Lejeune - UXO-17
Validated Surface Soil Raw Analytical Results
June 2011

Sample ID	MR17-SS22-11B	MR17-SS22D-11B
Sample Date	6/1/11	6/1/11
Chemical Name		
2-Methylphenol	183 U	188 U
2-Nitroaniline	731 U	752 U
2-Nitrophenol	183 U	188 U
3,3'-Dichlorobenzidine	183 U	188 U
3-Nitroaniline	731 U	752 U
4,6-Dinitro-2-methylphenol	1830 U	1880 U
4-Bromophenyl-phenylether	183 U	188 U
4-Chloro-3-methylphenol	183 UJ	188 UJ
4-Chloroaniline	183 U	188 U
4-Chlorophenyl-phenylether	183 U	188 U
4-Methylphenol	183 U	188 U
4-Nitroaniline	731 U	752 U
4-Nitrophenol	731 U	752 U
Acenaphthene	3.65 U	3.76 U
Acenaphthylene	3.65 U	3.76 U
Acetophenone	183 U	188 U
Anthracene	3.65 U	21
Atrazine	183 U	188 U
Benzaldehyde	183 U	188 U
Benzo(a)anthracene	3.65 U	3.76 U
Benzo(a)pyrene	3.65 U	3.76 U
Benzo(b)fluoranthene	3.65 U	64.6
Benzo(g,h,i)perylene	3.65 U	3.76 U
Benzo(k)fluoranthene	3.65 U	29.9
Bis(2-chloroethoxy)methane	183 U	188 U
Bis(2-chloroethyl)ether	183 UJ	188 UJ
Bis(2-ethylhexyl)phthalate	183 U	188 U
Butylbenzylphthalate	183 U	188 U
Caprolactam	183 U	188 U
Carbazole	183 U	188 U
Chrysene	3.65 U	3.76 U
Dibenz(a,h)anthracene	3.65 U	3.76 U
Dibenzofuran	183 U	188 U
Diethylphthalate	183 U	188 U
Dimethyl phthalate	183 U	188 U
Di-n-butylphthalate	183 U	188 U
Di-n-octylphthalate	183 U	188 U
Fluoranthene	3.65 U	119
Fluorene	3.65 U	3.76 U
Hexachlorobenzene	183 U	188 U
Hexachlorobutadiene	183 UJ	188 UJ
Hexachlorocyclopentadiene	183 U	188 U
Hexachloroethane	183 U	188 U
Indeno(1,2,3-cd)pyrene	3.65 U	3.76 U
Isophorone	183 U	188 U
Naphthalene	3.65 U	3.76 U
Nitrobenzene	183 U	188 U
N-Nitroso-di-n-propylamine	183 U	188 U
N-Nitrosodiphenylamine	183 UJ	188 UJ
Pentachlorophenol	731 U	752 U
Phenanthrene	3.65 U	93.6
Phenol	183 U	188 U
Pyrene	3.65 U	96

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Notes:

- J - Analyte present. Value may or may not be accurate or precise
- U - The material was analyzed for, but not detected
- UG/KG - Micrograms per kilogram
- UJ - Analyte not detected, quantitation limit may be inaccurate

Table 10
Camp Lejeune - UXO-17
Validated Subsurface Soil Raw Analytical Results
2008-2011

Station ID	ASR2_212-FR2-IS01		ASR2_212-FR2-IS02	ASR2_212-FR2-IS03	ASR2_212-FR2-IS04	MR17-IS01	MR17-IS02	MR17-IS03	MR17-IS04	MR17-IS05	MR17-IS06
Sample ID	ASR2_212-FR2-IS01-3-5-08D	ASR2_212-FR2-IS01D-3-5-08D	ASR2_212-FR2-IS02-4-6-08D	ASR2_212-FR2-IS03-5-7-08D	ASR2_212-FR2-IS04-5-7-08D	MR17-IS01-2-4-10D	MR17-IS02-4-6-10D	MR17-IS03-3-5-10D	MR17-IS04-3-5-10D	MR17-IS05-1-3-10D	MR17-IS06-8-10-10D
Sample Date	10/07/08	10/07/08	10/07/08	10/07/08	10/08/08	12/04/10	12/04/10	12/04/10	12/04/10	12/04/10	12/04/10
Chemical Name											
Explosives (µg/kg)											
1,3,5-Trinitrobenzene	620 UJ	620 UJ	620 UJ	620 UJ	620 UJ	39.2 U	38.5 U	39.6 U	39.6 U	39.2 U	38.8 U
1,3-Dinitrobenzene	620 U	620 U	620 U	620 U	620 U	39.2 U	38.5 U	39.6 U	39.6 U	39.2 U	38.8 U
2,4,6-Trinitrotoluene	620 U	620 U	620 U	620 U	620 U	39.2 U	38.5 U	39.6 U	39.6 U	39.2 U	38.8 U
2,4-Dinitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	39.2 U	38.5 U	39.6 U	39.6 U	39.2 U	38.8 U
2,6-Dinitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	39.2 U	26.6 J	39.6 U	39.6 U	39.2 U	38.8 U
2-Amino-4,6-dinitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	39.2 U	38.5 U	39.6 U	39.6 U	39.2 U	38.8 U
2-Nitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	39.2 U	38.5 U	39.6 U	39.6 U	39.2 U	38.8 U
3-Nitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	39.2 U	38.5 U	39.6 U	39.6 U	39.2 U	38.8 U
4-Amino-2,6-dinitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	39.2 U	38.5 U	39.6 U	39.6 U	39.2 U	38.8 U
4-Nitrotoluene	1,200 U	1,200 U	1,200 U	1,200 U	1,200 U	39.2 U	38.5 U	39.6 U	39.6 U	39.2 U	38.8 U
HMX	620 U	620 U	620 U	620 U	620 U	39.2 U	38.5 U	39.6 U	39.6 U	39.2 U	38.8 U
Nitrobenzene	620 U	620 U	620 U	620 U	620 U	39.2 U	38.5 U	39.6 U	39.6 U	39.2 U	38.8 U
Nitroglycerin	NA	NA	NA	NA	NA	196 U	192 U	198 U	198 U	196 U	194 U
Perchlorate	2.2 U	2.2 U	2.5 U	2.4 U	2.6 U	2.31 U	2.36 U	2.11 U	2.25 U	2.43 U	2.46 U
PETN	NA	NA	NA	NA	NA	196 U	192 U	198 U	198 U	196 U	194 U
RDX	620 U	620 U	620 U	620 U	620 U	39.2 U	38.5 U	39.6 U	39.6 U	39.2 U	38.8 U
Tetryl	1,200 R	1,200 R	1,200 R	1,200 R	1,200 R	39.2 U	28.5 J	26.4 J	33.5 J	39.2 U	38.8 U
Total Metals (mg/kg)											
Aluminum	NA	NA	NA	NA	NA	2,510	6,930	1,730	12,000	1,410	11,600
Antimony	NA	NA	NA	NA	NA	0.453 R	0.451 R	0.414 R	0.451 R	0.493 R	0.494 R
Arsenic	0.74 UJ	0.84 UJ	0.76 UJ	0.75 UJ	0.76 UJ	0.198 J	1.21	0.311 U	0.729	0.37 U	1.92
Barium	2.8 J	3.2 J	1.4 J	14.6 J	3.4 J	3.09	15.1	2.12	11	1.98 J	8.47
Beryllium	NA	NA	NA	NA	NA	0.113 U	0.158 J	0.104 U	0.142 J	0.123 U	0.156 J
Cadmium	0.07 U	0.08 U	0.08 U	0.08 UJ	0.08 U	0.113 U	0.129 J	0.104 U	0.113 U	0.123 U	0.123 U
Calcium	NA	NA	NA	NA	NA	440 J+	2,510 J+	104 U	113 U	123 U	457 J+
Chromium	2.5 J	7.7 J	2.3	12.4	3.3	2.6 J+	15.3 J+	2.1 J+	12.7 J+	1.47 J+	10.7 J+
Cobalt	NA	NA	NA	NA	NA	0.566 U	0.397 J	0.518 U	0.564 U	0.616 U	0.617 U
Copper	NA	NA	NA	NA	NA	0.398 J	1.66	0.409 J	1.73	0.466 J	1.09
Iron	NA	NA	NA	NA	NA	345	6,590	209	1,910	245	2,110
Lead	2.3	3.1	2.6	6.1	2.4	2.59	6.59	1.97	4.74	1.76	5.44
Magnesium	NA	NA	NA	NA	NA	170 U	309 J+	155 U	283 J+	185 U	308 J+
Manganese	NA	NA	NA	NA	NA	0.936	9.13	0.945	4.45	0.806 J	4.48
Mercury	0.018 UJ	0.019 UJ	0.02 UJ	0.018 UJ	0.018 UJ	0.0271 J	0.0196 J	0.017 J	0.0318 U	0.0401 U	0.0405 U
Nickel	NA	NA	NA	NA	NA	0.805	1.68	0.366 J	1.08	0.335 J	1.1
Potassium	NA	NA	NA	NA	NA	170 U	239 J+	155 U	466 J+	185 U	477 J+
Selenium	0.47 UJ	0.53 UJ	0.48 UJ	0.48 UJ	0.48 UJ	0.283 U	0.66	0.259 U	0.309 U	0.308 U	0.388 U
Silver	0.15 U	0.17 U	0.16 U	0.15 U	0.16 U	0.113 U	0.113 U	0.104 U	0.113 U	0.123 U	0.123 U
Sodium	NA	NA	NA	NA	NA	170 U	169 U	155 U	169 U	185 U	185 U
Thallium	NA	NA	NA	NA	NA	0.226 U	0.225 U	0.207 U	0.282 U	0.246 U	0.247 U
Vanadium	NA	NA	NA	NA	NA	2.45	15.7	1.45	13.2	1.24	10.9
Zinc	NA	NA	NA	NA	NA	1.25	6.97	0.729 U	2.91	1.18 U	3.52
Wet Chemistry											
% Solids (pct)	89.9	91	80.8	83.6	77.1	NA	NA	NA	NA	NA	NA

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Notes:

Shading indicates detections

NA - Not analyzed

J - Analyte present, value may or may not be accurate or precise

J+ - Analyte present, value may be biased high, actual value may be lower

N - Tentative Identification, consider present, special methods may be needed to confirm its presence or absence in future sampling efforts

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

mg/kg - Milligrams per kilogram

pct - Percent

µg/kg - Micrograms per kilogram

Table 10
Camp Lejeune - UXO-17
Validated Subsurface Soil Raw Analytical Results
2008-2011

Station ID	MR17-IS07		MR17-IS08	MR17-IS09/TW09	MR17-IS10/TW10	MR17-IS11/TW11	MR17-IS12/TW12	MR17-IS13/TW13	MR17-IS14/TW14		MR17-IS15/TW15
Sample ID	MR17-IS07-5-7-10D	MR17-IS07D-5-7-10D	MR17-IS08-6-8-10D	MR17-IS09-3-5-10D	MR17-IS10-3-5-10D	MR17-IS11-4-6-10D	MR17-IS12-5-7-10D	MR17-IS13-5-7-10D	MR17-IS14-6-8-10D	MR17-IS14D-6-8-10D	MR17-IS15-1-3-10D
Sample Date	12/04/10	12/04/10	12/04/10	12/01/10	12/01/10	12/02/10	12/02/10	12/03/10	12/03/10	12/03/10	12/02/10
Chemical Name											
Explosives (µg/kg)											
1,3,5-Trinitrobenzene	64.2 U	39.6 U	40 U	38.5 U	38.8 U	39.6 U	40 U	40 U	40 U	41.1 U	40 U
1,3-Dinitrobenzene	39.6 U	39.6 U	40 U	38.5 U	38.8 U	39.6 U	40 U	40 U	67.7 U	45.4 U	40 U
2,4,6-Trinitrotoluene	39.6 U	39.6 U	40 U	38.5 U	38.8 U	39.6 U	40 UJ	40 UJ	40 UJ	40 UJ	40 UJ
2,4-Dinitrotoluene	39.6 U	39.6 U	40 U	38.5 U	38.8 U	39.6 U	40 UJ	40 UJ	40 UJ	40 UJ	40 UJ
2,6-Dinitrotoluene	39.6 U	39.6 U	40 U	38.5 U	38.8 U	39.6 U	40 U	40 U	40 U	40 U	40 U
2-Amino-4,6-dinitrotoluene	46.7 J	39.6 U	40 U	38.5 U	38.8 U	39.6 U	40 U	40 U	40 U	40 U	40 U
2-Nitrotoluene	39.6 U	39.6 U	40 U	38.5 U	38.8 U	39.6 U	40 U	40 U	40 U	40 U	40 U
3-Nitrotoluene	39.6 U	39.6 U	40 U	38.5 U	38.8 U	39.6 U	40 U	40 U	40 U	40 U	40 U
4-Amino-2,6-dinitrotoluene	33 J	39.6 U	40 U	38.5 U	38.8 U	39.6 U	40 U	40 U	40 U	40 U	40 U
4-Nitrotoluene	100 N	39.6 U	40 U	38.5 U	38.8 U	39.6 U	40 U	40 U	40 U	40 U	40 U
HMX	39.6 U	39.6 U	40 U	38.5 U	38.8 U	39.6 U	40 U	40 U	40 U	40 U	40 U
Nitrobenzene	39.6 U	39.6 U	40 U	38.5 U	38.8 U	39.6 U	40 U	40 U	40 U	40 U	40 U
Nitroglycerin	198 U	198 U	200 U	192 U	194 U	198 U	200 U	200 U	200 U	200 U	200 U
Perchlorate	2.31 U	2.56 U	2.56 U	2.22 U	2.22 U	2.33 U	2.3 U	2.39 U	2.39 U	2.41 U	2.24 U
PETN	198 U	198 U	200 U	192 U	194 U	198 U	200 U	200 U	200 U	200 U	200 U
RDX	39.6 U	39.6 U	40 U	38.5 U	38.8 U	39.6 U	40 U	40 U	40 U	40 U	40 U
Tetryl	39.6 U	39.6 U	40 U	38.5 U	38.8 U	27.7 J	40 U	40 U	40 U	40 U	40 U
Total Metals (mg/kg)											
Aluminum	5,430	9,110	12,300	4,500	3,100	5,440	5,130	11,800	8,700	13,700	2,370
Antimony	0.468 R	0.491 R	0.505 R	0.453 U	0.44 U	0.461 R	0.464 R	0.47 U	0.485 U	0.494 U	0.457 U
Arsenic	1.4	1.11	0.752	0.599	0.33 U	0.518 J	0.419 J	2.98	0.625	1.08	0.409 J
Barium	7.1	8.58	10.7	2.43	3.41	8.6	9.66	13.5	7.81	13.2	6.41
Beryllium	0.107 J	0.193 J	0.174 J	0.113 U	0.11 U	0.0656 J	0.0743 J	0.167 J	0.172 J	0.239 J	0.114 U
Cadmium	0.117 U	0.123 U	0.126 U	0.106 J	0.11 U	0.115 U	0.116 U	0.118 U	0.064 J	0.123 U	0.114 U
Calcium	117 U	123 U	108 J+	113 U	110 U	115 J-	300 J-	85.1 J	121 U	123 U	287
Chromium	14.9 J+	9.24 J+	11.7 J+	3.34	2.5	6.35	4.71	15.8	10.3	16.3	2.92
Cobalt	0.585 U	0.613 U	0.631 U	0.566 U	0.55 U	0.576 U	0.454 J	0.37 J	0.386 J	0.428 J	0.572 U
Copper	1.13	1.21	1.59	0.299 J	0.444 J	0.355 J	1.02	1.95	1.28	1.64	0.78
Iron	3,170	2,600	2,310	1,740	215	827	754	3,010	2,030	3,150	942
Lead	3.84	4.68	5.66	3.84	3.31	4.2	3.64	5.32	4.26	6.57	2.49
Magnesium	154 J+	245 J+	314 J+	170 U	165 U	156 J+	210 J+	355	262 J	428	84.9 J
Manganese	6.13	3.99	4.76	1.27	0.956	2.42	5.48	4.75	4.85	6.01	3.01
Mercury	0.0381 U	0.0334 U	0.0373 U	0.0343 U	0.0261 J	0.029 J	0.0355 U	0.0358 U	0.0381 U	0.0372 U	0.0336 U
Nickel	0.901	0.828	1.08	1.03	0.551	0.764	1.27	1.49	0.847	1.24	0.708
Potassium	257 J+	401 J+	529 J+	170 U	165 U	132 J+	180 J+	588	356	577	73.9 J
Selenium	0.293 U	0.307 U	0.316 U	0.235 J	0.328 J	0.288 U	0.29 U	0.484 U	0.303 U	0.309 U	0.286 U
Silver	0.117 U	0.123 U	0.126 U	0.113 U	0.11 U	0.115 U	0.116 U	0.118 U	0.121 U	0.123 U	0.114 U
Sodium	176 U	184 U	189 U	170 U	165 U	173 U	174 U	176 U	182 U	185 U	171 U
Thallium	0.234 U	0.245 U	0.316 U	0.226 U	0.22 U	0.231 U	0.232 U	0.235 U	0.303 U	0.309 U	0.286 U
Vanadium	10.2	21.9	15.5	4.56	2.55	7.36	5.35	18.4	15.3	23.8	3.86
Zinc	2.57	3.48	4.15	0.873 J	1.36	1.76	2.24	3.97	5.85	6.98	1.62
Wet Chemistry											
% Solids (pct)	NA	NA	NA	NA	0.542 U	0.566 U	0.565 U	NA	NA	NA	NA

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Notes:

- Shading indicates detections
- NA - Not analyzed

J - Analyte present, value may or may not be accurate or precise

J+ - Analyte present, value may be biased high, actual value may be lower

N - Tentative Identification, consider present, special methods may be needed to confirm its presence or absence in future sampling efforts

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

mg/kg - Milligrams per kilogram

pct - Percent

µg/kg - Micrograms per kilogram

Camp Lejeune - UXO-17
Sediment Raw Analytical Results
December 2010

Station ID	MR17-SW/SD01
Sample ID	MR17-SD01-10D
Sample Date	12/03/10
Chemical Name	
Explosives (µg/kg)	
1,3,5-Trinitrobenzene	40 U
1,3-Dinitrobenzene	41.9 U
2,4,6-Trinitrotoluene	40 UJ
2,4-Dinitrotoluene	40 UJ
2,6-Dinitrotoluene	40 U
2-Amino-4,6-dinitrotoluene	40 U
2-Nitrotoluene	40 U
3-Nitrotoluene	40 U
4-Amino-2,6-dinitrotoluene	40 U
4-Nitrotoluene	40 U
HMX	40 U
Nitrobenzene	40 U
Nitroglycerin	200 U
Perchlorate	1.04 J
PETN	200 U
RDX	40 U
Tetryl	40 U
Total Metals (mg/kg)	
Aluminum	10,800
Antimony	0.522 U
Arsenic	1.85
Barium	25.7
Beryllium	0.21 J
Cadmium	0.375
Calcium	11,800
Chromium	12.3
Cobalt	1.19
Copper	4.29
Iron	5,160
Lead	13.2
Magnesium	544
Manganese	16.9
Mercury	0.0501
Nickel	4.17
Potassium	438
Selenium	0.51 U
Silver	0.131 U
Sodium	196 U
Thallium	0.326 U
Vanadium	17.4
Zinc	26.7

Notes:

Shading indicates detections

- J - Analyte present, value may or may not be accurate or precise
- U - The material was analyzed for, but not detected
- UJ - Analyte not detected, quantitation limit may be inaccurate
- mg/kg - Milligrams per kilogram
- µg/kg - Micrograms per kilogram

Camp Lejeune - UXO-17
Surface Water Raw Analytical Results
December 2010

Station ID	MR17-SW/SD01
Sample ID	MR17-SW01-10D
Sample Date	12/03/10
Chemical Name	
Explosives (µg/l)	
1,3,5-Trinitrobenzene	0.154 U
1,3-Dinitrobenzene	0.154 U
2,4,6-Trinitrotoluene	0.154 U
2,4-Dinitrotoluene	0.154 U
2,6-Dinitrotoluene	0.154 U
2-Amino-4,6-dinitrotoluene	0.154 U
2-Nitrotoluene	0.154 U
3-Nitrotoluene	0.154 U
4-Amino-2,6-dinitrotoluene	0.154 U
4-Nitrotoluene	0.154 U
HMX	0.154 U
Nitrobenzene	0.154 U
Nitroglycerin	0.385 U
Perchlorate	42.1
PETN	0.385 U
RDX	0.154 U
Tetryl	0.14 J
Total Metals (µg/l)	
Aluminum	103
Antimony	2 U
Arsenic	1.5 U
Barium	8.64 J
Beryllium	0.5 U
Cadmium	0.338 J
Calcium	42,200
Chromium	1 U
Cobalt	2.5 U
Copper	1.01 J
Iron	73.3
Lead	0.75 U
Magnesium	1,820
Manganese	3.82
Mercury	0.2 U
Nickel	1.5 U
Potassium	3,950
Selenium	1.25 U
Silver	0.5 U
Sodium	3,650
Thallium	1 U
Vanadium	2.5 U
Zinc	1.84 J
Dissolved Metals (µg/l)	
Aluminum, Dissolved	39.4 J
Antimony, Dissolved	2 U
Arsenic, Dissolved	1.5 U
Barium, Dissolved	8.42 J
Beryllium, Dissolved	0.5 U
Cadmium, Dissolved	0.5 U
Calcium, Dissolved	38,700
Chromium, Dissolved	1 U
Cobalt, Dissolved	2.5 U
Copper, Dissolved	2 U
Iron, Dissolved	28.3
Lead, Dissolved	0.472 J
Magnesium, Dissolved	1,740
Manganese, Dissolved	2.93 J
Mercury, Dissolved	0.2 U
Nickel, Dissolved	1.5 U
Potassium, Dissolved	3,690
Selenium, Dissolved	1.25 U
Silver, Dissolved	0.5 U
Sodium, Dissolved	3,490
Thallium, Dissolved	1 U
Vanadium, Dissolved	2.5 U
Zinc, Dissolved	1.6 J

Notes:

Shading indicates detections

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

µg/l - Micrograms per liter

Camp Lejeune - UXO-17
Validated Phase I and II Groundwater Detected Analytical Results
2008 through 2011

Station ID	ASR2_212-FR2-TW01		ASR2_212-FR2-TW02	ASR2_212-FR2-TW03	ASR2_212-FR2-TW04	MR17-IS09/TW09	MR17-IS10/TW10	MR17-IS11/TW11	MR17-IS12/TW12	MR17-IS13/TW13	MR17-IS14/TW14	MR17-IS15/TW15	
Sample ID	ASR2_212-FR2-TW01D-08D	ASR2_212-FR2-TW01-08D	ASR2_212-FR2-TW02-08D	ASR2_212-FR2-TW03-08D	ASR2_212-FR2-TW04-08D	MR17-MW09-10D	MR17-MW10-10D	MR17-MW11-10D	MR17-MW12-10D	MR17-MW13-10D	MR17-MW14-10D	MR17-MW15-10D	MR17-MW15D-10D
Sample Date	10/09/08	10/09/08	10/09/08	10/09/08	10/09/08	12/05/10	12/06/10	12/06/10	12/06/10	12/06/10	12/06/10	12/05/10	12/05/10
Chemical Name													
Semivolatile Organic Compounds (µg/l)													
2,4-Dinitrotoluene	5 U	5 U	5 U	5 U	5 U	0.15 U	0.111 J	0.16 U	0.168 U	0.168 U	0.16 U	0.16 U	0.157 U
2,6-Dinitrotoluene	5 U	5 U	5 U	5 U	5 U	0.15 U	0.154 U	0.16 U	0.168 U	0.168 U	0.16 U	0.16 U	0.157 U
Nitrobenzene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.15 U	0.154 U	0.16 U	0.168 U	0.168 U	0.16 U	0.16 U	0.157 U
	11	44											
Explosives (µg/l)													
1,3,5-Trinitrobenzene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.15 U	0.154 U	0.16 U	0.168 U	0.168 U	0.16 U	0.16 U	0.157 U
1,3-Dinitrobenzene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.15 U	0.154 U	0.16 U	0.168 U	0.168 U	0.16 U	0.16 U	0.157 U
2,4,6-Trinitrotoluene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.15 U	0.154 U	0.16 U	0.168 U	0.168 U	0.16 U	0.16 U	0.157 U
2-Amino-4,6-dinitrotoluene	5 U	5 U	5 U	5 U	5 U	0.15 U	0.154 U	0.16 U	0.168 U	0.168 U	0.16 U	0.16 U	0.157 U
2-Nitrotoluene	5 U	5 U	5 U	5 U	5 U	0.15 U	0.189 J	0.16 U	0.168 U	0.168 U	0.16 U	0.16 U	0.157 U
3-Nitrotoluene	5 U	5 U	5 U	5 U	5 U	0.15 U	0.113 J	0.16 U	0.168 U	0.168 U	0.16 U	0.42 U	0.282 U
4-Amino-2,6-dinitrotoluene	5 U	5 U	5 U	5 U	5 U	0.15 U	0.154 U	0.16 U	0.168 U	0.168 U	0.16 U	0.16 U	0.157 U
4-Nitrotoluene	5 U	5 U	5 U	5 U	5 U	0.15 U	0.154 U	0.16 U	0.168 U	0.168 U	0.16 U	0.16 U	0.157 U
HMX	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.15 U	0.154 U	0.16 U	0.168 U	0.168 U	0.16 U	0.16 U	0.157 U
Nitroglycerin	NA	NA	NA	NA	NA	0.374 U	1.15 U	0.4 U	0.421 U	0.421 U	0.4 U	0.4 U	0.392 U
Perchlorate	0.2 U	0.2 U	0.2 U	0.2 U	0.47	0.2 U	0.2 U	0.199 J	0.0879 J	0.101 J	0.0936 J	0.2 U	0.2 U
PETN	NA	NA	NA	NA	NA	0.374 U	0.385 U	0.4 U	0.421 U	0.421 U	0.4 U	0.4 U	0.392 U
RDX	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.14 J	0.154 U	0.16 U	0.168 U	0.115 J	0.16 U	0.16 U	0.157 U
Tetryl	5 U	5 U	5 U	5 U	5 U	0.15 U	0.289 J	0.16 U	0.168 U	0.168 U	0.16 U	0.16 U	0.157 U
Total Metals (µg/l)													
Aluminum	NA	NA	NA	NA	NA	702 J-	295 J-	230 J-	2,000 J-	1,280 J-	136 J-	251 J-	258 J-
Antimony	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Arsenic	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Barium	21.7 J	29.8 J	14.8 J	41.4 J	54.5 J	20.3	33	20.9	33.3	59.4	81	51.1	50.1
Beryllium	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.261 J	0.5 U	0.5 U
Cadmium	0.68 U	0.68 U	0.68 U	0.68 U	0.68 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Calcium	NA	NA	NA	NA	NA	1,340	10,800	2,260	28,900	8,760	1,930	18,100	17,200
Chromium	10 U	10.4	10 U	0.8 U	10 U	1.93 J	0.643 J	1 U	5.22	1 U	1 U	0.943 J	0.839 J
Cobalt	NA	NA	NA	NA	NA	2.5 U	1.28 J	2.5 U	2.5 U	2.5 U	4.3	2.5 U	2.5 U
Copper	NA	NA	NA	NA	NA	2 U	2 U	2 U	2.51	2 U	2 U	2 U	2 U
Iron	NA	NA	NA	NA	NA	208 J-	48 J-	65.6 J-	345 J-	47.3 J-	177 J-	675 J-	723 J-
Lead	2.8 UJ	4.1 J	2.8 U	2.8 U	2.8 U	0.577 J	0.75 U	0.75 U	1.3	1.22	0.75 U	0.75 U	0.481 J
Magnesium	NA	NA	NA	NA	NA	492 J	648 J	748 J	3,460	3,120	2,000	2,870	2,880
Manganese	NA	NA	NA	NA	NA	13.5	36.9	16.6	80.8	5.13	43.9	73.8	74.5
Mercury	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	NA	NA	NA	NA	NA	1.41 J	2.7	1.5 U	2.13 J	0.782 J	6.05	0.924 J	0.865 J
Potassium	NA	NA	NA	NA	NA	435 J	571 J	395 J	3,660	1,310	1,380	1,890	1,890
Selenium	4.3 U	4.3 U	4.3 U	6.9 J	4.3 U	1.25 U	1.25 U	1.25 U	0.92 J	1.25 U	1.25 U	1.25 U	1.25 U
Silver	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Sodium	NA	NA	NA	NA	NA	1,940	5,980	3,690	4,730	9,010	8,070	6,360	6,170
Thallium	NA	NA	NA	NA	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vanadium	NA	NA	NA	NA	NA	2.5 U	2.5 U	2.5 U	4.33	2.5 U	2.5 U	3.85	4.2
Zinc	NA	NA	NA	NA	NA	41.5 J-	3.35 J-	3.03 J-	1.49 J-	2.95 J-	11.5 J-	2.5 J-	2.5 J-
Dissolved Metals (µg/l)													
Aluminum, Dissolved	NA	NA	NA	NA	NA	NA	141 J-	124 J-	179 J-	NA	NA	NA	NA
Antimony, Dissolved	NA	NA	NA	NA	NA	NA	2 U	2 U	2 U	NA	NA	NA	NA
Arsenic, Dissolved	NA	NA	NA	NA	NA	NA	1.5 U	1.5 U	1.5 U	NA	NA	NA	NA
Barium, Dissolved	NA	NA	NA	NA	NA	NA	31.2	24.3	30.1	NA	NA	NA	NA
Beryllium, Dissolved	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA
Cadmium, Dissolved	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA
Calcium, Dissolved	NA	NA	NA	NA	NA	NA	11,100	2,810	29,600	NA	NA	NA	NA
Chromium, Dissolved	NA	NA	NA	NA	NA	NA	0.616 J	0.642 J	1.53 J	NA	NA	NA	NA
Cobalt, Dissolved	NA	NA	NA	NA	NA	NA	2.5 U	2.5 U	2.5 U	NA	NA	NA	NA
Copper, Dissolved	NA	NA	NA	NA	NA	NA	2 U	2 U	2.57	NA	NA	NA	NA
Iron, Dissolved	NA	NA	NA	NA	NA	NA	17.3 J-	46.6 J-	31.6 J-	NA	NA	NA	NA
Lead, Dissolved	NA	NA	NA	NA	NA	NA	0.75 U	0.75 U	0.492 J	NA	NA	NA	NA
Magnesium, Dissolved	NA	NA	NA	NA	NA	NA	670 J	905 J	3,430	NA	NA	NA	NA
Manganese, Dissolved	NA	NA	NA	NA	NA	NA	30.4	18.7	78	NA	NA	NA	NA
Mercury, Dissolved	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA
Nickel, Dissolved	NA	NA	NA	NA	NA	NA	2.35 J	1.22 J	1.19 J	NA	NA	NA	NA
Potassium, Dissolved	NA	NA	NA	NA	NA	NA	526 J	481 J	3,530	NA	NA	NA	NA
Selenium, Dissolved	NA	NA	NA	NA	NA	NA	1.25 U	0.825 J	1.25 U	NA	NA	NA	NA
Silver, Dissolved	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA
Sodium, Dissolved	NA	NA	NA	NA	NA	NA	6,030	4,350	4,800	NA	NA	NA	NA
Thallium, Dissolved	NA	NA	NA	NA	NA	NA	1 U	1 U	1 U	NA	NA	NA	NA
Vanadium, Dissolved	NA	NA	NA	NA	NA	NA	2.5 U	2.5 U	2.39 J	NA	NA	NA	NA
Zinc, Dissolved	NA	NA	NA	NA	NA	NA	3.47 J-	3.22 J-	2.5 UJ	NA	NA	NA	NA
Wet Chemistry													
Chromium (hexavalent) (mg/l)	NA	NA	NA	NA	NA	NA	0.02 U	0.02 U	0.02 U	NA	NA	NA	NA

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Notes:

Shading indicates detections
NA - Not analyzed
J - Analyte present, value may or may not be accurate or precise
J- - Analyte present, value may be biased low, actual value may be higher
U - The material was analyzed for, but not detected
UJ - Analyte not detected, quantitation limit may be inaccurate
mg/l - Milligrams per liter
µg/l - Micrograms per liter

Camp Lejeune - UXO-17
Validated Phase III Groundwater Raw Analytical Results
July 2011

Sample ID	MR17-GW09-11C	MR17-GW11-11C	MR17-GW13-11C	MR17-GW14-11C	MR17-GW15-11C	MR17-GW16-11C	MR17-GW17-11C	MR17-GW17D-11C	MR17-GW18-11C
Sample Date	7/28/11	7/28/11	7/29/11	7/29/11	7/29/11	7/29/11	7/26/11	7/26/11	7/26/11
Chemical Name									
Volatile Organic Compounds (UG/L)									
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	12 R	12 R	12 R	12 R	12 R	12 R	12 R	12 R	12 R
2-Hexanone	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
4-Methyl-2-pentanone	12 R	12 R	12 R	12 R	12 R	12 R	12 R	12 R	12 R
Acetone	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U
Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	2 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cyclohexane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane (Freon-12)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
m- and p-Xylene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Methyl acetate	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylcyclohexane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl-tert-butyl ether (MTBE)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
o-Xylene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane (Freon-11)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Semivolatile Organic Compounds (UG/L)									
1,1-Biphenyl	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4,5-Trichlorophenol	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U

Camp Lejeune - UXO-17
Validated Phase III Groundwater Raw Analytical Results
July 2011

Sample ID	MR17-GW09-11C	MR17-GW11-11C	MR17-GW13-11C	MR17-GW14-11C	MR17-GW15-11C	MR17-GW16-11C	MR17-GW17-11C	MR17-GW17D-11C	MR17-GW18-11C
Sample Date	7/28/11	7/28/11	7/29/11	7/29/11	7/29/11	7/29/11	7/26/11	7/26/11	7/26/11
Chemical Name									
2,4,6-Trichlorophenol	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
2,4-Dichlorophenol	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
2,4-Dimethylphenol	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
2,4-Dinitrophenol	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
2,4-Dinitrotoluene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
2,6-Dinitrotoluene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
2-Chloronaphthalene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
2-Chlorophenol	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
2-Methylnaphthalene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
2-Methylphenol	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
2-Nitroaniline	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
2-Nitrophenol	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
3- and 4-Methylphenol	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
3,3'-Dichlorobenzidine	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
3-Nitroaniline	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
4,6-Dinitro-2-methylphenol	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
4-Bromophenyl-phenylether	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
4-Chloro-3-methylphenol	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
4-Chloroaniline	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
4-Chlorophenyl-phenylether	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
4-Nitroaniline	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
4-Nitrophenol	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Acenaphthene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Acenaphthylene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Acetophenone	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Anthracene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Atrazine	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzaldehyde	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzo(a)anthracene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Benzo(a)pyrene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Benzo(b)fluoranthene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Benzo(g,h,i)perylene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Benzo(k)fluoranthene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
bis(2-Chloroethoxy)methane	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
bis(2-Chloroethyl)ether	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
bis(2-Chloroisopropyl)ether	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
bis(2-Ethylhexyl)phthalate	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Butylbenzylphthalate	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Caprolactam	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Carbazole	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Chrysene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Dibenz(a,h)anthracene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Dibenzofuran	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Diethylphthalate	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Dimethyl phthalate	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Di-n-butylphthalate	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Di-n-octylphthalate	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Fluoranthene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Fluorene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Hexachlorobenzene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Hexachlorobutadiene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Hexachlorocyclopentadiene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Hexachloroethane	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Indeno(1,2,3-cd)pyrene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U

Camp Lejeune - UXO-17
Validated Phase III Groundwater Raw Analytical Results
July 2011

Sample ID	MR17-GW09-11C	MR17-GW11-11C	MR17-GW13-11C	MR17-GW14-11C	MR17-GW15-11C	MR17-GW16-11C	MR17-GW17-11C	MR17-GW17D-11C	MR17-GW18-11C
Sample Date	7/28/11	7/28/11	7/29/11	7/29/11	7/29/11	7/29/11	7/26/11	7/26/11	7/26/11
Chemical Name									
Isophorone	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Naphthalene	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Nitrobenzene	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
n-Nitroso-di-n-propylamine	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
n-Nitrosodiphenylamine	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Pentachlorophenol	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Phenanthrene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Phenol	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Pyrene	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U

C:\Documents and Settings\user\Desktop\UXO 17\App H Analytical Data\14_CFO-WE41_UXO-17_Val_GW_RD_tbl.xlsx], Troy Horn, 08/30/2011

Notes:

- J - Analyte present. Value may or may not be accurate or precise
- R - Unreliable Result
- U - The material was analyzed for, but not detected
- UG/L - Micrograms per liter



06/10/11

Technical Report for

Clean Harbors Env Svcs

CH2M Hill-Camp Lejeune; Jacksonville, NC

NC 3470002

Accutest Job Number: F81835R

Sampling Date: 04/25/11

Report to:

Clean Harbors

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ATTN: Jim Poch

Total number of pages in report: **61**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.


Harry Behzadi, Ph.D.
Laboratory Director

Client Service contact: Jean Dent-Smith 407-425-6700

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK
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Test results relate only to samples analyzed.

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Sample Summary

Clean Harbors Env Svcs

Job No: F81835R

CH2M Hill-Camp Lejeune; Jacksonville, NC
Project No: NC 3470002

Sample Number	Collected		Matrix Code Type	Client	
	Date	Time By	Received	Sample ID	
F81835-1R	04/25/11	15:25 DL	04/27/11	SO	Soil UNKNOWN DRUM

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	UNKNOWN DRUM			Date Sampled:	04/25/11
Lab Sample ID:	F81835-1R			Date Received:	04/27/11
Matrix:	SO - Soil			Percent Solids:	59.7
Method:	SW846 8260B SW846 5030A				
Project:	CH2M Hill-Camp Lejeune; Jacksonville, NC				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	G0073485.D	10	06/09/11	SH	06/09/11 10:02	n/a	VG2743
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	4.63 g	5.0 ml	10.0 ul
Run #2			

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	620000	250000	ug/kg	
107-02-8	Acrolein ^b	ND	310000	140000	ug/kg	
107-13-1	Acrylonitrile	ND	310000	140000	ug/kg	
71-43-2	Benzene	ND	62000	19000	ug/kg	
108-86-1	Bromobenzene	ND	62000	17000	ug/kg	
74-97-5	Bromochloromethane	ND	62000	17000	ug/kg	
75-27-4	Bromodichloromethane	ND	62000	14000	ug/kg	
75-25-2	Bromoform	ND	62000	19000	ug/kg	
104-51-8	n-Butylbenzene	114000	62000	16000	ug/kg	
135-98-8	sec-Butylbenzene	120000	62000	20000	ug/kg	
98-06-6	tert-Butylbenzene	ND	62000	15000	ug/kg	
108-90-7	Chlorobenzene	ND	62000	12000	ug/kg	
75-00-3	Chloroethane	ND	62000	25000	ug/kg	
67-66-3	Chloroform	ND	62000	15000	ug/kg	
95-49-8	o-Chlorotoluene	ND	62000	15000	ug/kg	
106-43-4	p-Chlorotoluene	ND	62000	15000	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	310000	120000	ug/kg	
75-15-0	Carbon disulfide	ND	62000	25000	ug/kg	
56-23-5	Carbon tetrachloride	ND	62000	22000	ug/kg	
75-34-3	1,1-Dichloroethane	ND	62000	14000	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	62000	17000	ug/kg	
563-58-6	1,1-Dichloropropene	ND	62000	16000	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	62000	29000	ug/kg	
106-93-4	1,2-Dibromoethane	ND	62000	12000	ug/kg	
107-06-2	1,2-Dichloroethane	ND	62000	12000	ug/kg	
78-87-5	1,2-Dichloropropane	ND	62000	15000	ug/kg	
142-28-9	1,3-Dichloropropane	ND	62000	12000	ug/kg	
594-20-7	2,2-Dichloropropane	ND	62000	17000	ug/kg	
124-48-1	Dibromochloromethane	ND	62000	12000	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	62000	19000	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	62000	19000	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	62000	12000	ug/kg	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	UNKNOWN DRUM		
Lab Sample ID:	F81835-1R	Date Sampled:	04/25/11
Matrix:	SO - Soil	Date Received:	04/27/11
Method:	SW846 8260B SW846 5030A	Percent Solids:	59.7
Project:	CH2M Hill-Camp Lejeune; Jacksonville, NC		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
541-73-1	m-Dichlorobenzene	ND	62000	15000	ug/kg	
95-50-1	o-Dichlorobenzene	ND	62000	14000	ug/kg	
106-46-7	p-Dichlorobenzene	ND	62000	14000	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	62000	19000	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	62000	14000	ug/kg	
100-41-4	Ethylbenzene	ND	62000	12000	ug/kg	
591-78-6	2-Hexanone	ND	310000	67000	ug/kg	
87-68-3	Hexachlorobutadiene	ND	62000	25000	ug/kg	
98-82-8	Isopropylbenzene	16600	62000	14000	ug/kg	J
99-87-6	p-Isopropyltoluene	188000	62000	15000	ug/kg	
108-10-1	4-Methyl-2-pentanone	ND	310000	68000	ug/kg	
74-83-9	Methyl bromide	ND	62000	25000	ug/kg	
74-87-3	Methyl chloride	ND	62000	25000	ug/kg	
74-95-3	Methylene bromide	ND	62000	19000	ug/kg	
75-09-2	Methylene chloride ^c	837000	120000	57000	ug/kg	
78-93-3	Methyl ethyl ketone	ND	310000	76000	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	62000	25000	ug/kg	
91-20-3	Naphthalene	1350000	62000	25000	ug/kg	
103-65-1	n-Propylbenzene	35000	62000	17000	ug/kg	J
100-42-5	Styrene	ND	62000	32000	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	62000	12000	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	62000	14000	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	62000	15000	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	62000	14000	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	62000	12000	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	62000	21000	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	62000	15000	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	1210000	62000	14000	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	349000	62000	16000	ug/kg	
127-18-4	Tetrachloroethylene	ND	62000	12000	ug/kg	
108-88-3	Toluene	ND	62000	15000	ug/kg	
79-01-6	Trichloroethylene	ND	62000	15000	ug/kg	
75-69-4	Trichlorofluoromethane	ND	62000	25000	ug/kg	
75-01-4	Vinyl chloride	ND	62000	19000	ug/kg	
108-05-4	Vinyl Acetate	ND	310000	170000	ug/kg	
	m,p-Xylene	ND	120000	27000	ug/kg	
95-47-6	o-Xylene	27400	62000	12000	ug/kg	J

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	UNKNOWN DRUM		
Lab Sample ID:	F81835-1R	Date Sampled:	04/25/11
Matrix:	SO - Soil	Date Received:	04/27/11
Method:	SW846 8260B SW846 5030A	Percent Solids:	59.7
Project:	CH2M Hill-Camp Lejeune; Jacksonville, NC		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-121%
2037-26-5	Toluene-D8	89%		71-130%
460-00-4	4-Bromofluorobenzene	105%		59-148%
17060-07-0	1,2-Dichloroethane-D4	104%		77-123%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
111-84-2	Nonane	14.43	600000	ug/kg	JN
	unknown hydrocarbon	14.93	200000	ug/kg	J
2051-30-1	Octane, 2,6-dimethyl-	15.03	440000	ug/kg	JN
	unknown hydrocarbon	15.13	220000	ug/kg	J
	unknown hydrocarbon	15.20	1200000	ug/kg	J
	unknown hydrocarbon	15.32	260000	ug/kg	J
17301-94-9	Nonane, 4-methyl-	15.39	1300000	ug/kg	JN
	unknown hydrocarbon	15.63	360000	ug/kg	J
	unknown hydrocarbon	15.73	210000	ug/kg	J
	unknown hydrocarbon	15.78	600000	ug/kg	J
620-14-4	Benzene, 1-ethyl-3-methyl-	16.03	220000	ug/kg	JN
526-73-8	Benzene, 1,2,3-trimethyl-	16.34	340000	ug/kg	JN
	unknown hydrocarbon	17.00	750000	ug/kg	J
	unknown hydrocarbon	17.19	190000	ug/kg	J
99-87-6	Benzene, 1-methyl-4-(1-methylethyl)	17.34	270000	ug/kg	JN
	unknown hydrocarbon	17.50	350000	ug/kg	J
934-74-7	Benzene, 1-ethyl-3,5-dimethyl-	17.57	230000	ug/kg	JN
95-93-2	Benzene, 1,2,4,5-tetramethyl-	17.77	220000	ug/kg	JN
95-93-2	Benzene, 1,2,4,5-tetramethyl-	17.82	360000	ug/kg	JN
99-87-6	Benzene, 1-methyl-4-(1-methylethyl)	18.23	440000	ug/kg	JN
	Total TIC, Volatile		8760000	ug/kg	J

- (a) Sample analyzed beyond hold time; reported results are considered minimum values.
 (b) CCV outside of control limits; results may be biased low.
 (c) Associated BS recovery outside control limits.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	UNKNOWN DRUM			Date Sampled:	04/25/11
Lab Sample ID:	F81835-1R			Date Received:	04/27/11
Matrix:	SO - Soil			Percent Solids:	59.7
Method:	SW846 8270D SW846 3550C				
Project:	CH2M Hill-Camp Lejeune; Jacksonville, NC				

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	X018596.D	40	06/04/11	FS	05/28/11	OP37356	SX916
Run #2							

Run #	Initial Weight	Final Volume
Run #1	5.00 g	1.0 ml
Run #2		

ABN Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	340000	120000	ug/kg	
95-57-8	2-Chlorophenol	ND	67000	6700	ug/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	67000	6700	ug/kg	
120-83-2	2,4-Dichlorophenol	ND	67000	6700	ug/kg	
105-67-9	2,4-Dimethylphenol	34900	67000	8400	ug/kg	J
51-28-5	2,4-Dinitrophenol	ND	340000	130000	ug/kg	
534-52-1	4,6-Dinitro-o-cresol	ND	130000	27000	ug/kg	
95-48-7	2-Methylphenol	ND	67000	6700	ug/kg	
	3&4-Methylphenol	ND	67000	9600	ug/kg	
88-75-5	2-Nitrophenol	ND	67000	6700	ug/kg	
100-02-7	4-Nitrophenol	ND	340000	54000	ug/kg	
87-86-5	Pentachlorophenol	ND	340000	80000	ug/kg	
108-95-2	Phenol	ND	67000	6700	ug/kg	
95-95-4	2,4,5-Trichlorophenol	ND	67000	6700	ug/kg	
88-06-2	2,4,6-Trichlorophenol	ND	67000	6700	ug/kg	
83-32-9	Acenaphthene	ND	67000	6700	ug/kg	
208-96-8	Acenaphthylene	ND	67000	6700	ug/kg	
62-53-3	Aniline	ND	67000	13000	ug/kg	
120-12-7	Anthracene	ND	67000	6700	ug/kg	
92-87-5	Benzidine	ND	670000	130000	ug/kg	
56-55-3	Benzo(a)anthracene	ND	67000	6700	ug/kg	
50-32-8	Benzo(a)pyrene	ND	67000	6700	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	67000	6700	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	67000	6700	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	67000	6700	ug/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	67000	6700	ug/kg	
85-68-7	Butyl benzyl phthalate	ND	67000	13000	ug/kg	
100-51-6	Benzyl Alcohol	ND	67000	13000	ug/kg	
91-58-7	2-Chloronaphthalene	ND	67000	13000	ug/kg	
106-47-8	4-Chloroaniline	ND	67000	6700	ug/kg	
86-74-8	Carbazole	ND	67000	6700	ug/kg	
218-01-9	Chrysene	ND	67000	6700	ug/kg	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	UNKNOWN DRUM		
Lab Sample ID:	F81835-1R	Date Sampled:	04/25/11
Matrix:	SO - Soil	Date Received:	04/27/11
Method:	SW846 8270D SW846 3550C	Percent Solids:	59.7
Project:	CH2M Hill-Camp Lejeune; Jacksonville, NC		

ABN Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
111-91-1	bis(2-Chloroethoxy)methane	ND	67000	6700	ug/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	67000	6700	ug/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	67000	6700	ug/kg	
7005-72-3	4-Chlorophenyl phenyl ether	ND	67000	6700	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	67000	13000	ug/kg	
122-66-7	1,2-Diphenylhydrazine	ND	67000	6700	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	67000	13000	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	67000	13000	ug/kg	
121-14-2	2,4-Dinitrotoluene	ND	67000	6700	ug/kg	
606-20-2	2,6-Dinitrotoluene	ND	67000	7900	ug/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	130000	13000	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	67000	6700	ug/kg	
132-64-9	Dibenzofuran	ND	67000	6700	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	130000	27000	ug/kg	
117-84-0	Di-n-octyl phthalate	ND	67000	13000	ug/kg	
84-66-2	Diethyl phthalate	ND	130000	27000	ug/kg	
131-11-3	Dimethyl phthalate	ND	67000	13000	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	130000	27000	ug/kg	
206-44-0	Fluoranthene	ND	67000	6700	ug/kg	
86-73-7	Fluorene	ND	67000	6700	ug/kg	
118-74-1	Hexachlorobenzene	ND	67000	6700	ug/kg	
87-68-3	Hexachlorobutadiene	ND	67000	13000	ug/kg	
77-47-4	Hexachlorocyclopentadiene	ND	67000	29000	ug/kg	
67-72-1	Hexachloroethane	ND	67000	13000	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	67000	6700	ug/kg	
78-59-1	Isophorone	ND	67000	6700	ug/kg	
90-12-0	1-Methylnaphthalene	42600	67000	6700	ug/kg	J
91-57-6	2-Methylnaphthalene	59300	67000	6700	ug/kg	J
88-74-4	2-Nitroaniline	ND	67000	13000	ug/kg	
99-09-2	3-Nitroaniline	ND	67000	13000	ug/kg	
100-01-6	4-Nitroaniline	ND	67000	13000	ug/kg	
91-20-3	Naphthalene	568000	67000	11000	ug/kg	
98-95-3	Nitrobenzene	ND	67000	6700	ug/kg	
62-75-9	N-Nitrosodimethylamine	ND	130000	28000	ug/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	67000	6700	ug/kg	
86-30-6	N-Nitrosodiphenylamine	ND	67000	6700	ug/kg	
85-01-8	Phenanthrene	ND	67000	6700	ug/kg	
129-00-0	Pyrene	ND	67000	6700	ug/kg	
110-86-1	Pyridine	ND	130000	27000	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	67000	6700	ug/kg	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	UNKNOWN DRUM		
Lab Sample ID:	F81835-1R	Date Sampled:	04/25/11
Matrix:	SO - Soil	Date Received:	04/27/11
Method:	SW846 8270D SW846 3550C	Percent Solids:	59.7
Project:	CH2M Hill-Camp Lejeune; Jacksonville, NC		

ABN Full List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	0% ^b		40-102%
4165-62-2	Phenol-d5	0% ^b		41-100%
118-79-6	2,4,6-Tribromophenol	0% ^b		42-108%
4165-60-0	Nitrobenzene-d5	0% ^b		40-105%
321-60-8	2-Fluorobiphenyl	0% ^b		43-107%
1718-51-0	Terphenyl-d14	0% ^b		45-119%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
2051-30-1	Octane, 2,6-dimethyl-	4.80	340000	ug/kg	JN
17301-94-9	Nonane, 4-methyl-	5.03	280000	ug/kg	JN
592-76-7	1-Heptene	5.05	460000	ug/kg	JN
5911-04-6	Nonane, 3-methyl-	5.11	330000	ug/kg	JN
4291-79-6	Cyclohexane, 1-methyl-2-propyl-	5.24	650000	ug/kg	JN
526-73-8	Benzene, 1,2,3-trimethyl-	5.32	300000	ug/kg	JN
124-18-5	Decane	5.34	1300000	ug/kg	JN
108-67-8	Benzene, 1,3,5-trimethyl-	5.54	500000	ug/kg	JN
112-45-8	10-Undecenal	5.58	330000	ug/kg	JN
1678-93-9	Cyclohexane, butyl-	5.62	720000	ug/kg	JN
13151-34-3	Decane, 3-methyl-	5.71	300000	ug/kg	JN
1074-43-7	Benzene, 1-methyl-3-propyl-	5.74	410000	ug/kg	JN
13151-35-4	Decane, 5-methyl-	5.75	320000	ug/kg	JN
1758-88-9	Benzene, 2-ethyl-1,4-dimethyl-	5.78	510000	ug/kg	JN
535-77-3	Benzene, 1-methyl-3-(1-methylethyl)-	5.94	330000	ug/kg	JN
934-80-5	Benzene, 4-ethyl-1,2-dimethyl-	5.98	1200000	ug/kg	JN
20019-64-1	2(5H)-Furanone, 5,5-dimethyl-	6.03	330000	ug/kg	JN
1120-21-4	Undecane	6.08	2200000	ug/kg	JN
95-93-2	Benzene, 1,2,4,5-tetramethyl-	6.24	440000	ug/kg	JN
488-23-3	Benzene, 1,2,3,4-tetramethyl-	6.45	370000	ug/kg	JN
	Total TIC, Semi-Volatile		11620000	ug/kg	J

(a) Sample extracted beyond hold time; reported results are considered minimum values. Dilution required due to matrix interference.

(b) Outside control limits due to dilution.

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	UNKNOWN DRUM				
Lab Sample ID:	F81835-1R			Date Sampled:	04/25/11
Matrix:	SO - Soil			Date Received:	04/27/11
Method:	SW846 8151A SW846 3546			Percent Solids:	59.7
Project:	CH2M Hill-Camp Lejeune; Jacksonville, NC				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	CC032273.D	20	06/07/11	RB	06/02/11	OP37412	GCC207
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	5.0 ml
Run #2		

Herbicide List

CAS No.	Compound	Result	RL	MDL	Units	Q
94-75-7	2,4-D	ND	1100	340	ug/kg	
93-72-1	2,4,5-TP (Silvex)	ND	110	37	ug/kg	
93-76-5	2,4,5-T	ND	110	36	ug/kg	
1918-00-9	Dicamba	ND	110	47	ug/kg	
88-85-7	Dinoseb	ND	2700	550	ug/kg	
75-99-0	Dalapon	ND	5500	1100	ug/kg	
120-36-5	Dichloroprop	ND	1100	380	ug/kg	
94-82-6	2,4-DB	ND	1100	340	ug/kg	
93-65-2	MCP	ND	110000	24000	ug/kg	
94-74-6	MCPA	ND	110000	35000	ug/kg	
87-86-5	Pentachlorophenol	ND	110	26	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	0% ^b		40-140%

(a) Sample extracted beyond hold time; reported results are considered minimum values. Dilution required due to matrix interference.

(b) Outside control limits due to dilution.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	UNKNOWN DRUM				
Lab Sample ID:	F81835-1R		Date Sampled:	04/25/11	
Matrix:	SO - Soil		Date Received:	04/27/11	
Method:	SW846 8081B SW846 3550C		Percent Solids:	59.7	
Project:	CH2M Hill-Camp Lejeune; Jacksonville, NC				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	KK42922.D	40	06/06/11	RB	06/03/11	OP37428	GKK1453
Run #2							

	Initial Weight	Final Volume
Run #1	29.9 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	110	29	ug/kg	
319-84-6	alpha-BHC	ND	110	25	ug/kg	
319-85-7	beta-BHC	ND	110	25	ug/kg	
319-86-8	delta-BHC	ND	110	22	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	110	27	ug/kg	
5103-71-9	alpha-Chlordane	ND	110	25	ug/kg	
5103-74-2	gamma-Chlordane	ND	110	25	ug/kg	
60-57-1	Dieldrin	ND	110	25	ug/kg	
72-54-8	4,4' -DDD	ND	220	29	ug/kg	
72-55-9	4,4' -DDE	ND	220	27	ug/kg	
50-29-3	4,4' -DDT	ND	220	29	ug/kg	
72-20-8	Endrin	ND	220	27	ug/kg	
1031-07-8	Endosulfan sulfate	ND	220	25	ug/kg	
7421-93-4	Endrin aldehyde	ND	220	29	ug/kg	
53494-70-5	Endrin ketone	ND	220	25	ug/kg	
959-98-8	Endosulfan-I	ND	110	22	ug/kg	
33213-65-9	Endosulfan-II	ND	110	22	ug/kg	
76-44-8	Heptachlor	ND	110	27	ug/kg	
1024-57-3	Heptachlor epoxide	ND	110	22	ug/kg	
72-43-5	Methoxychlor	ND	220	45	ug/kg	
8001-35-2	Toxaphene	ND	5600	2200	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	0% ^b		46-122%
2051-24-3	Decachlorobiphenyl	0% ^b		50-133%

(a) Sample extracted beyond hold time. Dilution required due to matrix interference.

(b) Outside control limits due to dilution.

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: UNKNOWN DRUM**Lab Sample ID:** F81835-1R**Date Sampled:** 04/25/11**Matrix:** SO - Soil**Date Received:** 04/27/11**Percent Solids:** 59.7**Project:** CH2M Hill-Camp Lejeune; Jacksonville, NC**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	0.91	0.59	mg/kg	1	06/03/11	06/03/11 RS	SW846 6010C ²	SW846 3050B ⁵
Barium	12.2	12	mg/kg	1	06/03/11	06/03/11 RS	SW846 6010C ²	SW846 3050B ⁵
Cadmium	0.40	0.23	mg/kg	1	06/03/11	06/03/11 RS	SW846 6010C ²	SW846 3050B ⁵
Chromium ^a	5.4	2.9	mg/kg	5	06/03/11	06/06/11 RS	SW846 6010C ³	SW846 3050B ⁵
Lead ^a	28.1	5.9	mg/kg	5	06/03/11	06/06/11 RS	SW846 6010C ³	SW846 3050B ⁵
Mercury ^b	< 0.14	0.14	mg/kg	1	06/03/11	06/03/11 LM	SW846 7471B ¹	SW846 7471B ⁴
Selenium ^a	< 5.9	5.9	mg/kg	5	06/03/11	06/06/11 RS	SW846 6010C ³	SW846 3050B ⁵
Silver	< 0.59	0.59	mg/kg	1	06/03/11	06/03/11 RS	SW846 6010C ²	SW846 3050B ⁵

(1) Instrument QC Batch: MA8995

(2) Instrument QC Batch: MA8996

(3) Instrument QC Batch: MA8999

(4) Prep QC Batch: MP20703

(5) Prep QC Batch: MP20706

(a) Elevated reporting limit(s) due to matrix interference.

(b) Analyzed out of hold time.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Accutest Laboratories Southeast Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, FL 32811
TEL. 407-425-6700 • FAX: 407-425-0707

Accutest JOB #

F81835

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Accutest Quote #	Customer Name	Product	Price	Quantity	Total	Notes
12345	ABC Corp	Product X	\$10.00	100	\$1000.00	
67890	DEF Inc	Product Y	\$20.00	50	\$1000.00	
11111	GHI LLC	Product Z	\$15.00	66.67	\$1000.00	

TSKFF#

[illegible]

F81835R: Chain of Custody

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3.13

TEMPERATURE INFORMATION

SAMPLE INFORMATION

TRIP BLANK INFORMATION

MISC. INFORMATION

{APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}

SUMMARY OF COMMENTS: _____

TECHNICIAN SIGNATURE/DATE EF 04/27/11 REVIEWER SIGNATURE/DATE [Signature] 04/27/11

NF 12/10

receipt confirmation 122910.xls

Job Change Order: F81835_5/27/2011

Requested Date:	5/27/2011	Received Date:	4/27/2011
Account Name:	Clean Harbors Env Svcs	Due Date:	5/4/2011
Project Description:	CH2M Hill-Camp Lejeune; Jacksonville, NC	Deliverable:	COMMB
CSR:	JDS	TAT (Days):	5

Sample #:
F81835-1

Change: client would like to have sample analyzed for the following parameters; V8260STD+, AB8270STD+, P8081PESTTCL, H8151FL and HM8. Please log due date as 6/6/11. Thank you.

UNKNOWN DRUM

Above Changes

client, Lisa Schwan, via e-mail request

Date: 5/27/2011

F81835R: Chain of Custody

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To Client: This Change Order is confirmation of the revisions, previously discussed with the Accutest Client Service Representative.

Page 1 of 1

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 3

Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VG2743-MB	G0073482.D	1	06/09/11	SH	n/a	n/a	VG2743

The QC reported here applies to the following samples:

Method: SW846 8260B

F81835-1R

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	20	ug/kg	
107-02-8	Acrolein	ND	25	11	ug/kg	
107-13-1	Acrylonitrile	ND	25	11	ug/kg	
71-43-2	Benzene	ND	5.0	1.5	ug/kg	
108-86-1	Bromobenzene	ND	5.0	1.4	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	1.4	ug/kg	
75-27-4	Bromodichloromethane	ND	5.0	1.1	ug/kg	
75-25-2	Bromoform	ND	5.0	1.5	ug/kg	
104-51-8	n-Butylbenzene	ND	5.0	1.3	ug/kg	
135-98-8	sec-Butylbenzene	ND	5.0	1.6	ug/kg	
98-06-6	tert-Butylbenzene	ND	5.0	1.2	ug/kg	
108-90-7	Chlorobenzene	ND	5.0	1.0	ug/kg	
75-00-3	Chloroethane	ND	5.0	2.0	ug/kg	
67-66-3	Chloroform	ND	5.0	1.2	ug/kg	
95-49-8	o-Chlorotoluene	ND	5.0	1.2	ug/kg	
106-43-4	p-Chlorotoluene	ND	5.0	1.2	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	25	10	ug/kg	
75-15-0	Carbon disulfide	ND	5.0	2.0	ug/kg	
56-23-5	Carbon tetrachloride	ND	5.0	1.8	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.0	1.1	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	5.0	1.4	ug/kg	
563-58-6	1,1-Dichloropropene	ND	5.0	1.3	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	2.3	ug/kg	
106-93-4	1,2-Dibromoethane	ND	5.0	1.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	5.0	1.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	5.0	1.2	ug/kg	
142-28-9	1,3-Dichloropropane	ND	5.0	1.0	ug/kg	
594-20-7	2,2-Dichloropropane	ND	5.0	1.4	ug/kg	
124-48-1	Dibromochloromethane	ND	5.0	1.0	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.0	1.5	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	5.0	1.5	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	1.0	ug/kg	
541-73-1	m-Dichlorobenzene	ND	5.0	1.2	ug/kg	
95-50-1	o-Dichlorobenzene	ND	5.0	1.1	ug/kg	
106-46-7	p-Dichlorobenzene	ND	5.0	1.1	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	5.0	1.5	ug/kg	

Method Blank Summary

Page 2 of 3

Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VG2743-MB	G0073482.D	1	06/09/11	SH	n/a	n/a	VG2743

The QC reported here applies to the following samples:

Method: SW846 8260B

F81835-1R

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	1.1	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	1.0	ug/kg	
591-78-6	2-Hexanone	ND	25	5.4	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	2.0	ug/kg	
98-82-8	Isopropylbenzene	ND	5.0	1.1	ug/kg	
99-87-6	p-Isopropyltoluene	ND	5.0	1.2	ug/kg	
108-10-1	4-Methyl-2-pentanone	ND	25	5.5	ug/kg	
74-83-9	Methyl bromide	ND	5.0	2.0	ug/kg	
74-87-3	Methyl chloride	ND	5.0	2.0	ug/kg	
74-95-3	Methylene bromide	ND	5.0	1.5	ug/kg	
75-09-2	Methylene chloride	ND	10	4.6	ug/kg	
78-93-3	Methyl ethyl ketone	ND	25	6.1	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	5.0	2.0	ug/kg	
91-20-3	Naphthalene	ND	5.0	2.0	ug/kg	
103-65-1	n-Propylbenzene	ND	5.0	1.4	ug/kg	
100-42-5	Styrene	ND	5.0	2.6	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	1.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	5.0	1.1	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	1.2	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	5.0	1.1	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	1.7	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.2	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	1.1	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	1.3	ug/kg	
127-18-4	Tetrachloroethylene	ND	5.0	1.0	ug/kg	
108-88-3	Toluene	ND	5.0	1.2	ug/kg	
79-01-6	Trichloroethylene	ND	5.0	1.2	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.0	2.0	ug/kg	
75-01-4	Vinyl chloride	ND	5.0	1.5	ug/kg	
108-05-4	Vinyl Acetate	ND	25	14	ug/kg	
95-47-6	m,p-Xylene	ND	10	2.2	ug/kg	
	o-Xylene	ND	5.0	1.0	ug/kg	

Method Blank Summary

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Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VG2743-MB	G0073482.D	1	06/09/11	SH	n/a	n/a	VG2743

The QC reported here applies to the following samples:

Method: SW846 8260B

F81835-1R

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	102% 80-121%
2037-26-5	Toluene-D8	93% 71-130%
460-00-4	4-Bromofluorobenzene	97% 59-148%
17060-07-0	1,2-Dichloroethane-D4	103% 77-123%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile ^a		0	ug/kg	

(a) No TICs detected.

Blank Spike Summary

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Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VG2743-BS	G0073481.D	1	06/09/11	SH	n/a	n/a	VG2743

The QC reported here applies to the following samples:

Method: SW846 8260B

F81835-1R

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	250	329	132	61-144
107-02-8	Acrolein	250	81.3	33	27-156
107-13-1	Acrylonitrile	250	241	96	55-144
71-43-2	Benzene	50	52.4	105	78-130
108-86-1	Bromobenzene	50	49.0	98	78-123
74-97-5	Bromochloromethane	50	51.5	103	72-122
75-27-4	Bromodichloromethane	50	53.0	106	73-122
75-25-2	Bromoform	50	44.7	89	70-139
104-51-8	n-Butylbenzene	50	53.1	106	80-138
135-98-8	sec-Butylbenzene	50	59.6	119	82-132
98-06-6	tert-Butylbenzene	50	57.6	115	79-130
108-90-7	Chlorobenzene	50	53.0	106	83-122
75-00-3	Chloroethane	50	64.2	128	61-153
67-66-3	Chloroform	50	53.0	106	79-129
95-49-8	o-Chlorotoluene	50	49.2	98	77-123
106-43-4	p-Chlorotoluene	50	50.5	101	78-129
110-75-8	2-Chloroethyl vinyl ether	250	276	110	52-142
75-15-0	Carbon disulfide	50	56.7	113	61-142
56-23-5	Carbon tetrachloride	50	65.6	131	79-135
75-34-3	1,1-Dichloroethane	50	52.6	105	77-132
75-35-4	1,1-Dichloroethylene	50	57.0	114	66-132
563-58-6	1,1-Dichloropropene	50	55.4	111	81-133
96-12-8	1,2-Dibromo-3-chloropropane	50	46.1	92	67-129
106-93-4	1,2-Dibromoethane	50	48.1	96	77-126
107-06-2	1,2-Dichloroethane	50	50.6	101	78-129
78-87-5	1,2-Dichloropropane	50	49.1	98	74-127
142-28-9	1,3-Dichloropropane	50	47.8	96	78-118
594-20-7	2,2-Dichloropropane	50	56.3	113	80-137
124-48-1	Dibromochloromethane	50	46.6	93	78-117
75-71-8	Dichlorodifluoromethane	50	103	206*	35-162
156-59-2	cis-1,2-Dichloroethylene	50	51.5	103	74-123
10061-01-5	cis-1,3-Dichloropropene	50	52.2	104	79-130
541-73-1	m-Dichlorobenzene	50	52.3	105	82-126
95-50-1	o-Dichlorobenzene	50	52.3	105	83-123
106-46-7	p-Dichlorobenzene	50	53.5	107	84-124
156-60-5	trans-1,2-Dichloroethylene	50	52.6	105	77-129

Blank Spike Summary

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Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VG2743-BS	G0073481.D	1	06/09/11	SH	n/a	n/a	VG2743

The QC reported here applies to the following samples:

Method: SW846 8260B

F81835-1R

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
10061-02-6	trans-1,3-Dichloropropene	50	54.4	109	87-131
100-41-4	Ethylbenzene	50	53.3	107	82-124
591-78-6	2-Hexanone	250	255	102	67-130
87-68-3	Hexachlorobutadiene	50	69.9	140	77-150
98-82-8	Isopropylbenzene	50	61.3	123	82-133
99-87-6	p-Isopropyltoluene	50	54.3	109	82-132
108-10-1	4-Methyl-2-pentanone	250	232	93	69-125
74-83-9	Methyl bromide	50	60.6	121	60-146
74-87-3	Methyl chloride	50	61.2	122	58-163
74-95-3	Methylene bromide	50	50.5	101	75-128
75-09-2	Methylene chloride	50	112	224*	62-140
78-93-3	Methyl ethyl ketone	250	272	109	66-134
1634-04-4	Methyl Tert Butyl Ether	50	49.3	99	70-131
91-20-3	Naphthalene	50	46.8	94	59-143
103-65-1	n-Propylbenzene	50	50.6	101	78-129
100-42-5	Styrene	50	51.7	103	79-123
630-20-6	1,1,1,2-Tetrachloroethane	50	52.7	105	81-121
71-55-6	1,1,1-Trichloroethane	50	56.7	113	80-133
79-34-5	1,1,2,2-Tetrachloroethane	50	45.3	91	70-128
79-00-5	1,1,2-Trichloroethane	50	46.3	93	76-118
87-61-6	1,2,3-Trichlorobenzene	50	54.8	110	78-136
96-18-4	1,2,3-Trichloropropane	50	48.0	96	74-125
120-82-1	1,2,4-Trichlorobenzene	50	57.7	115	82-137
95-63-6	1,2,4-Trimethylbenzene	50	55.4	111	77-129
108-67-8	1,3,5-Trimethylbenzene	50	49.8	100	79-129
127-18-4	Tetrachloroethylene	50	55.2	110	79-132
108-88-3	Toluene	50	51.5	103	80-123
79-01-6	Trichloroethylene	50	52.0	104	78-132
75-69-4	Trichlorofluoromethane	50	74.8	150*	67-149
75-01-4	Vinyl chloride	50	63.7	127	60-145
108-05-4	Vinyl Acetate	250	256	102	25-164
	m,p-Xylene	100	107	107	82-128
95-47-6	o-Xylene	50	51.4	103	82-126

Blank Spike Summary

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Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VG2743-BS	G0073481.D	1	06/09/11	SH	n/a	n/a	VG2743

The QC reported here applies to the following samples:

Method: SW846 8260B

F81835-1R

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	104%	80-121%
2037-26-5	Toluene-D8	99%	71-130%
460-00-4	4-Bromofluorobenzene	95%	59-148%
17060-07-0	1,2-Dichloroethane-D4	111%	77-123%

GC/MS Semi-volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

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Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37356-MB	X018576.D	1	06/03/11	FS	05/28/11	OP37356	SX916

The QC reported here applies to the following samples:

Method: SW846 8270D

F81835-1R

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	830	290	ug/kg	
95-57-8	2-Chlorophenol	ND	170	17	ug/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	170	17	ug/kg	
120-83-2	2,4-Dichlorophenol	ND	170	17	ug/kg	
105-67-9	2,4-Dimethylphenol	ND	170	21	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	830	330	ug/kg	
534-52-1	4,6-Dinitro-o-cresol	ND	330	67	ug/kg	
95-48-7	2-Methylphenol	ND	170	17	ug/kg	
	3&4-Methylphenol	ND	170	24	ug/kg	
88-75-5	2-Nitrophenol	ND	170	17	ug/kg	
100-02-7	4-Nitrophenol	ND	830	130	ug/kg	
87-86-5	Pentachlorophenol	ND	830	200	ug/kg	
108-95-2	Phenol	ND	170	17	ug/kg	
95-95-4	2,4,5-Trichlorophenol	ND	170	17	ug/kg	
88-06-2	2,4,6-Trichlorophenol	ND	170	17	ug/kg	
83-32-9	Acenaphthene	ND	170	17	ug/kg	
208-96-8	Acenaphthylene	ND	170	17	ug/kg	
62-53-3	Aniline	ND	170	33	ug/kg	
120-12-7	Anthracene	ND	170	17	ug/kg	
92-87-5	Benzidine	ND	1700	330	ug/kg	
56-55-3	Benzo(a)anthracene	ND	170	17	ug/kg	
50-32-8	Benzo(a)pyrene	ND	170	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	170	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	170	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	170	17	ug/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	170	17	ug/kg	
85-68-7	Butyl benzyl phthalate	ND	170	33	ug/kg	
100-51-6	Benzyl Alcohol	ND	170	33	ug/kg	
91-58-7	2-Chloronaphthalene	ND	170	33	ug/kg	
106-47-8	4-Chloroaniline	ND	170	17	ug/kg	
86-74-8	Carbazole	ND	170	17	ug/kg	
218-01-9	Chrysene	ND	170	17	ug/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	170	17	ug/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	170	17	ug/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	170	17	ug/kg	
7005-72-3	4-Chlorophenyl phenyl ether	ND	170	17	ug/kg	

Method Blank Summary

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Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37356-MB	X018576.D	1	06/03/11	FS	05/28/11	OP37356	SX916

The QC reported here applies to the following samples:

Method: SW846 8270D

F81835-1R

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	1,2-Dichlorobenzene	ND	170	33	ug/kg	
122-66-7	1,2-Diphenylhydrazine	ND	170	17	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	170	33	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	170	33	ug/kg	
121-14-2	2,4-Dinitrotoluene	ND	170	17	ug/kg	
606-20-2	2,6-Dinitrotoluene	ND	170	20	ug/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	330	33	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	170	17	ug/kg	
132-64-9	Dibenzofuran	ND	170	17	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	330	67	ug/kg	
117-84-0	Di-n-octyl phthalate	ND	170	33	ug/kg	
84-66-2	Diethyl phthalate	ND	330	67	ug/kg	
131-11-3	Dimethyl phthalate	ND	170	33	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	330	67	ug/kg	
206-44-0	Fluoranthene	ND	170	17	ug/kg	
86-73-7	Fluorene	ND	170	17	ug/kg	
118-74-1	Hexachlorobenzene	ND	170	17	ug/kg	
87-68-3	Hexachlorobutadiene	ND	170	33	ug/kg	
77-47-4	Hexachlorocyclopentadiene	ND	170	73	ug/kg	
67-72-1	Hexachloroethane	ND	170	33	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	170	17	ug/kg	
78-59-1	Isophorone	ND	170	17	ug/kg	
90-12-0	1-Methylnaphthalene	ND	170	17	ug/kg	
91-57-6	2-Methylnaphthalene	ND	170	17	ug/kg	
88-74-4	2-Nitroaniline	ND	170	33	ug/kg	
99-09-2	3-Nitroaniline	ND	170	33	ug/kg	
100-01-6	4-Nitroaniline	ND	170	33	ug/kg	
91-20-3	Naphthalene	ND	170	27	ug/kg	
98-95-3	Nitrobenzene	ND	170	17	ug/kg	
62-75-9	N-Nitrosodimethylamine	ND	330	70	ug/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	170	17	ug/kg	
86-30-6	N-Nitrosodiphenylamine	ND	170	17	ug/kg	
85-01-8	Phenanthrene	ND	170	17	ug/kg	
129-00-0	Pyrene	ND	170	17	ug/kg	
110-86-1	Pyridine	ND	330	67	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	170	17	ug/kg	

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Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37356-MB	X018576.D	1	06/03/11	FS	05/28/11	OP37356	SX916

The QC reported here applies to the following samples:

Method: SW846 8270D

F81835-1R

CAS No.	Surrogate Recoveries	Limits
367-12-4	2-Fluorophenol	75% 40-102%
4165-62-2	Phenol-d5	84% 41-100%
118-79-6	2,4,6-Tribromophenol	73% 42-108%
4165-60-0	Nitrobenzene-d5	81% 40-105%
321-60-8	2-Fluorobiphenyl	77% 43-107%
1718-51-0	Terphenyl-d14	90% 45-119%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
79-34-5	Ethane, 1,1,2,2-tetrachloro-	4.67	210	ug/kg	JN
	Total TIC, Semi-Volatile		210	ug/kg	J

Method Blank Summary

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Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37356-MB	U025817.D	1	06/05/11	NAF	05/28/11	OP37356	SU1240

The QC reported here applies to the following samples:

Method: SW846 8270D

F81835-1R

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	830	290	ug/kg	
95-57-8	2-Chlorophenol	ND	170	17	ug/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	170	17	ug/kg	
120-83-2	2,4-Dichlorophenol	ND	170	17	ug/kg	
105-67-9	2,4-Dimethylphenol	ND	170	21	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	830	330	ug/kg	
534-52-1	4,6-Dinitro-o-cresol	ND	330	67	ug/kg	
95-48-7	2-Methylphenol	ND	170	17	ug/kg	
	3&4-Methylphenol	ND	170	24	ug/kg	
88-75-5	2-Nitrophenol	ND	170	17	ug/kg	
100-02-7	4-Nitrophenol	ND	830	130	ug/kg	
87-86-5	Pentachlorophenol	ND	830	200	ug/kg	
108-95-2	Phenol	ND	170	17	ug/kg	
95-95-4	2,4,5-Trichlorophenol	ND	170	17	ug/kg	
88-06-2	2,4,6-Trichlorophenol	ND	170	17	ug/kg	
83-32-9	Acenaphthene	ND	170	17	ug/kg	
208-96-8	Acenaphthylene	ND	170	17	ug/kg	
62-53-3	Aniline	ND	170	33	ug/kg	
120-12-7	Anthracene	ND	170	17	ug/kg	
92-87-5	Benzidine	ND	1700	330	ug/kg	
56-55-3	Benzo(a)anthracene	ND	170	17	ug/kg	
50-32-8	Benzo(a)pyrene	ND	170	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	170	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	170	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	170	17	ug/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	170	17	ug/kg	
85-68-7	Butyl benzyl phthalate	ND	170	33	ug/kg	
100-51-6	Benzyl Alcohol	ND	170	33	ug/kg	
91-58-7	2-Chloronaphthalene	ND	170	33	ug/kg	
106-47-8	4-Chloroaniline	ND	170	17	ug/kg	
86-74-8	Carbazole	ND	170	17	ug/kg	
218-01-9	Chrysene	ND	170	17	ug/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	170	17	ug/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	170	17	ug/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	170	17	ug/kg	
7005-72-3	4-Chlorophenyl phenyl ether	ND	170	17	ug/kg	

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Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37356-MB	U025817.D	1	06/05/11	NAF	05/28/11	OP37356	SU1240

The QC reported here applies to the following samples:

Method: SW846 8270D

F81835-1R

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	1,2-Dichlorobenzene	ND	170	33	ug/kg	
122-66-7	1,2-Diphenylhydrazine	ND	170	17	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	170	33	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	170	33	ug/kg	
121-14-2	2,4-Dinitrotoluene	ND	170	17	ug/kg	
606-20-2	2,6-Dinitrotoluene	ND	170	20	ug/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	330	33	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	170	17	ug/kg	
132-64-9	Dibenzofuran	ND	170	17	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	330	67	ug/kg	
117-84-0	Di-n-octyl phthalate	ND	170	33	ug/kg	
84-66-2	Diethyl phthalate	ND	330	67	ug/kg	
131-11-3	Dimethyl phthalate	ND	170	33	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	330	67	ug/kg	
206-44-0	Fluoranthene	ND	170	17	ug/kg	
86-73-7	Fluorene	ND	170	17	ug/kg	
118-74-1	Hexachlorobenzene	ND	170	17	ug/kg	
87-68-3	Hexachlorobutadiene	ND	170	33	ug/kg	
77-47-4	Hexachlorocyclopentadiene	ND	170	73	ug/kg	
67-72-1	Hexachloroethane	ND	170	33	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	170	17	ug/kg	
78-59-1	Isophorone	ND	170	17	ug/kg	
90-12-0	1-Methylnaphthalene	ND	170	17	ug/kg	
91-57-6	2-Methylnaphthalene	ND	170	17	ug/kg	
88-74-4	2-Nitroaniline	ND	170	33	ug/kg	
99-09-2	3-Nitroaniline	ND	170	33	ug/kg	
100-01-6	4-Nitroaniline	ND	170	33	ug/kg	
91-20-3	Naphthalene	ND	170	27	ug/kg	
98-95-3	Nitrobenzene	ND	170	17	ug/kg	
62-75-9	N-Nitrosodimethylamine	ND	330	70	ug/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	170	17	ug/kg	
86-30-6	N-Nitrosodiphenylamine	ND	170	17	ug/kg	
85-01-8	Phenanthrene	ND	170	17	ug/kg	
129-00-0	Pyrene	ND	170	17	ug/kg	
110-86-1	Pyridine	ND	330	67	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	170	17	ug/kg	

Method Blank Summary

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Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37356-MB	U025817.D	1	06/05/11	NAF	05/28/11	OP37356	SU1240

The QC reported here applies to the following samples:

Method: SW846 8270D

F81835-1R

CAS No.	Surrogate Recoveries	Limits
367-12-4	2-Fluorophenol	76% 40-102%
4165-62-2	Phenol-d5	86% 41-100%
118-79-6	2,4,6-Tribromophenol	84% 42-108%
4165-60-0	Nitrobenzene-d5	76% 40-105%
321-60-8	2-Fluorobiphenyl	81% 43-107%
1718-51-0	Terphenyl-d14	77% 45-119%

Blank Spike Summary

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Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37356-BS	X018575.D	1	06/03/11	FS	05/28/11	OP37356	SX916

The QC reported here applies to the following samples:

Method: SW846 8270D

F81835-1R

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
65-85-0	Benzoic Acid	3330	2490	75	44-116
95-57-8	2-Chlorophenol	1670	1170	70	54-97
59-50-7	4-Chloro-3-methyl phenol	1670	1250	75	59-102
120-83-2	2,4-Dichlorophenol	1670	1250	75	60-101
105-67-9	2,4-Dimethylphenol	1670	1150	69	49-89
51-28-5	2,4-Dinitrophenol	3330	2550	77	39-107
534-52-1	4,6-Dinitro-o-cresol	3330	2720	82	58-109
95-48-7	2-Methylphenol	1670	1180	71	53-94
	3&4-Methylphenol	3330	2400	72	54-95
88-75-5	2-Nitrophenol	1670	1230	74	55-96
100-02-7	4-Nitrophenol	3330	2620	79	56-106
87-86-5	Pentachlorophenol	3330	2480	74	50-115
108-95-2	Phenol	1670	1200	72	55-99
95-95-4	2,4,5-Trichlorophenol	1670	1220	73	60-101
88-06-2	2,4,6-Trichlorophenol	1670	1250	75	60-100
83-32-9	Acenaphthene	1670	1290	77	59-97
208-96-8	Acenaphthylene	1670	1270	76	58-98
62-53-3	Aniline	1670	1210	73	38-92
120-12-7	Anthracene	1670	1270	76	61-104
56-55-3	Benzo(a)anthracene	1670	1290	77	60-106
50-32-8	Benzo(a)pyrene	1670	1300	78	59-102
205-99-2	Benzo(b)fluoranthene	1670	1320	79	60-107
191-24-2	Benzo(g,h,i)perylene	1670	1410	85	56-103
207-08-9	Benzo(k)fluoranthene	1670	1320	79	61-107
101-55-3	4-Bromophenyl phenyl ether	1670	1220	73	60-104
85-68-7	Butyl benzyl phthalate	1670	1390	83	57-110
100-51-6	Benzyl Alcohol	1670	1270	76	51-102
91-58-7	2-Chloronaphthalene	1670	1240	74	57-95
106-47-8	4-Chloroaniline	1670	1180	71	19-85
86-74-8	Carbazole	1670	1290	77	60-106
218-01-9	Chrysene	1670	1290	77	60-107
111-91-1	bis(2-Chloroethoxy)methane	1670	1240	74	51-89
111-44-4	bis(2-Chloroethyl)ether	1670	1210	73	50-96
108-60-1	bis(2-Chloroisopropyl)ether	1670	1320	79	44-94
7005-72-3	4-Chlorophenyl phenyl ether	1670	1280	77	60-101
95-50-1	1,2-Dichlorobenzene	1670	1160	70	47-91

Blank Spike Summary

Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37356-BS	X018575.D	1	06/03/11	FS	05/28/11	OP37356	SX916

The QC reported here applies to the following samples:

Method: SW846 8270D

F81835-1R

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
122-66-7	1,2-Diphenylhydrazine	1670	1260	76	58-104
541-73-1	1,3-Dichlorobenzene	1670	1090	65	45-86
106-46-7	1,4-Dichlorobenzene	1670	1120	67	45-88
121-14-2	2,4-Dinitrotoluene	1670	1290	77	59-103
606-20-2	2,6-Dinitrotoluene	1670	1260	76	57-99
91-94-1	3,3'-Dichlorobenzidine	1670	1120	67	34-88
53-70-3	Dibenzo(a,h)anthracene	1670	1370	82	57-105
132-64-9	Dibenzofuran	1670	1290	77	58-103
84-74-2	Di-n-butyl phthalate	1670	1220	73	59-105
117-84-0	Di-n-octyl phthalate	1670	1380	83	59-117
84-66-2	Diethyl phthalate	1670	1310	79	59-106
131-11-3	Dimethyl phthalate	1670	1270	76	60-100
117-81-7	bis(2-Ethylhexyl)phthalate	1670	1340	80	57-111
206-44-0	Fluoranthene	1670	1200	72	60-110
86-73-7	Fluorene	1670	1300	78	60-99
118-74-1	Hexachlorobenzene	1670	1180	71	58-103
87-68-3	Hexachlorobutadiene	1670	1210	73	49-95
77-47-4	Hexachlorocyclopentadiene	1670	1210	73	36-94
67-72-1	Hexachloroethane	1670	1130	68	44-89
193-39-5	Indeno(1,2,3-cd)pyrene	1670	1390	83	57-104
78-59-1	Isophorone	1670	1060	64	58-97
90-12-0	1-Methylnaphthalene	1670	1200	72	55-93
91-57-6	2-Methylnaphthalene	1670	1230	74	57-103
88-74-4	2-Nitroaniline	1670	1620	97	53-106
99-09-2	3-Nitroaniline	1670	1210	73	29-85
100-01-6	4-Nitroaniline	1670	1270	76	49-104
91-20-3	Naphthalene	1670	1210	73	54-93
98-95-3	Nitrobenzene	1670	1210	73	53-92
62-75-9	N-Nitrosodimethylamine	1670	1080	65	37-88
621-64-7	N-Nitroso-di-n-propylamine	1670	1230	74	49-94
86-30-6	N-Nitrosodiphenylamine	1670	1210	73	53-107
85-01-8	Phenanthrene	1670	1340	80	61-103
129-00-0	Pyrene	1670	1380	83	58-109
110-86-1	Pyridine	1670	966	58	30-68
120-82-1	1,2,4-Trichlorobenzene	1670	1100	66	52-93

Blank Spike Summary

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Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37356-BS	X018575.D	1	06/03/11	FS	05/28/11	OP37356	SX916

The QC reported here applies to the following samples:

Method: SW846 8270D

F81835-1R

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	73%	40-102%
4165-62-2	Phenol-d5	81%	41-100%
118-79-6	2,4,6-Tribromophenol	77%	42-108%
4165-60-0	Nitrobenzene-d5	79%	40-105%
321-60-8	2-Fluorobiphenyl	78%	43-107%
1718-51-0	Terphenyl-d14	90%	45-119%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 3

Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37356-MS	X018578.D	1	06/03/11	FS	05/28/11	OP37356	SX916
OP37356-MSD	X018579.D	1	06/03/11	FS	05/28/11	OP37356	SX916
F82575-14	X018577.D	1	06/03/11	FS	05/28/11	OP37356	SX916

The QC reported here applies to the following samples:

Method: SW846 8270D

F81835-1R

CAS No.	Compound	F82575-14 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND		4320	2630	61	2200	51	18	44-116/36
95-57-8	2-Chlorophenol	ND		2160	1430	66	1060	50*	30	54-97/31
59-50-7	4-Chloro-3-methyl phenol	ND		2160	1490	69	1280	60	15	59-102/27
120-83-2	2,4-Dichlorophenol	ND		2160	1540	71	1190	56*	26	60-101/30
105-67-9	2,4-Dimethylphenol	ND		2160	946	44*	779	36*	19	49-89/31
51-28-5	2,4-Dinitrophenol	ND		4320	3010	70	2490	58	19	39-107/40
534-52-1	4,6-Dinitro-o-cresol	ND		4320	3340	77	2740	64	20	58-109/37
95-48-7	2-Methylphenol	ND		2160	1240	57	985	46*	23	53-94/29
	3&4-Methylphenol	ND		4320	2630	61	2080	49*	23	54-95/31
88-75-5	2-Nitrophenol	ND		2160	1570	73	1170	55	29	55-96/30
100-02-7	4-Nitrophenol	ND		4320	2660	62	2290	54*	15	56-106/29
87-86-5	Pentachlorophenol	ND		4320	2980	69	2450	57	20	50-115/33
108-95-2	Phenol	ND		2160	1300	60	1010	47*	25	55-99/28
95-95-4	2,4,5-Trichlorophenol	ND		2160	1480	69	1220	57*	19	60-101/28
88-06-2	2,4,6-Trichlorophenol	ND		2160	1540	71	1240	58*	22	60-100/27
83-32-9	Acenaphthene	ND		2160	1620	75	1290	60	23	59-97/29
208-96-8	Acenaphthylene	348		2160	2020	77	1590	58	24	58-98/30
62-53-3	Aniline	ND		2160	573	27*	412	19*	33	38-92/38
120-12-7	Anthracene	425		2160	2190	82	1710	60*	25	61-104/29
56-55-3	Benzo(a)anthracene	1290		2160	3180	87	2450	54*	26	60-106/31
50-32-8	Benzo(a)pyrene	1150		2160	2910	81	2360	57*	21	59-102/32
205-99-2	Benzo(b)fluoranthene	2700		2160	4850	100	3930	58*	21	60-107/31
191-24-2	Benzo(g,h,i)perylene	781		2160	2370	74	1870	51*	24	56-103/32
207-08-9	Benzo(k)fluoranthene	961		2160	2530	73	2000	49*	23	61-107/30
101-55-3	4-Bromophenyl phenyl ether	ND		2160	1530	71	1230	58*	22	60-104/26
85-68-7	Butyl benzyl phthalate	ND		2160	1720	80	1380	65	22	57-110/28
100-51-6	Benzyl Alcohol	ND		2160	1550	72	1230	58	23	51-102/34
91-58-7	2-Chloronaphthalene	ND		2160	1530	71	1200	56*	24	57-95/28
106-47-8	4-Chloroaniline	ND		2160	890	41	703	33	23	19-85/34
86-74-8	Carbazole	79.1	J	2160	1590	70	1320	58*	19	60-106/30
218-01-9	Chrysene	1330		2160	3190	86	2460	53*	26	60-107/31
111-91-1	bis(2-Chloroethoxy)methane	ND		2160	1600	74	1200	56	29	51-89/30
111-44-4	bis(2-Chloroethyl)ether	ND		2160	1570	73	1150	54	31	50-96/33
108-60-1	bis(2-Chloroisopropyl)ether	ND		2160	1670	77	1250	58	29	44-94/32
7005-72-3	4-Chlorophenyl phenyl ether	ND		2160	1590	74	1300	61	20	60-101/26
95-50-1	1,2-Dichlorobenzene	ND		2160	1390	64	968	45*	36*	47-91/35

Matrix Spike/Matrix Spike Duplicate Summary

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Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37356-MS	X018578.D	1	06/03/11	FS	05/28/11	OP37356	SX916
OP37356-MSD	X018579.D	1	06/03/11	FS	05/28/11	OP37356	SX916
F82575-14	X018577.D	1	06/03/11	FS	05/28/11	OP37356	SX916

The QC reported here applies to the following samples:

Method: SW846 8270D

F81835-1R

CAS No.	Compound	F82575-14 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
122-66-7	1,2-Diphenylhydrazine	ND		2160	1600	74	1310	61	20	58-104/27
541-73-1	1,3-Dichlorobenzene	ND		2160	1340	62	941	44*	35	45-86/36
106-46-7	1,4-Dichlorobenzene	ND		2160	1360	63	963	45	34	45-88/36
121-14-2	2,4-Dinitrotoluene	ND		2160	1630	75	1390	65	16	59-103/30
606-20-2	2,6-Dinitrotoluene	ND		2160	1610	75	1340	63	18	57-99/30
91-94-1	3,3'-Dichlorobenzidine	ND		2160	167	8*	164	8*	2	34-88/31
53-70-3	Dibenzo(a,h)anthracene	81.2	J	2160	1850	82	1500	66	21	57-105/29
132-64-9	Dibenzofuran	32.8	J	2160	1590	72	1300	59	20	58-103/27
84-74-2	Di-n-butyl phthalate	ND		2160	1540	71	1260	59	20	59-105/27
117-84-0	Di-n-octyl phthalate	ND		2160	1600	74	1370	64	15	59-117/28
84-66-2	Diethyl phthalate	ND		2160	1630	75	1340	63	20	59-106/27
131-11-3	Dimethyl phthalate	ND		2160	1630	75	1340	63	20	60-100/26
117-81-7	bis(2-Ethylhexyl)phthalate	ND		2160	1730	80	1420	66	20	57-111/29
206-44-0	Fluoranthene	982		2160	2640	77	2090	52*	23	60-110/32
86-73-7	Fluorene	ND		2160	1650	76	1350	63	20	60-99/30
118-74-1	Hexachlorobenzene	ND		2160	1460	68	1210	57*	19	58-103/27
87-68-3	Hexachlorobutadiene	ND		2160	1420	66	1000	47*	35*	49-95/33
77-47-4	Hexachlorocyclopentadiene	ND		2160	1400	65	890	42	45*	36-94/41
67-72-1	Hexachloroethane	ND		2160	1330	62	908	42*	38	44-89/38
193-39-5	Indeno(1,2,3-cd)pyrene	952		2160	2750	83	2190	58	23	57-104/33
78-59-1	Isophorone	ND		2160	1350	62	1040	49*	26	58-97/30
90-12-0	1-Methylnaphthalene	66.8	J	2160	1580	70	1190	53*	28	55-93/33
91-57-6	2-Methylnaphthalene	83.9	J	2160	1590	70	1250	55*	24	57-103/32
88-74-4	2-Nitroaniline	ND		2160	2050	95	1690	79	19	53-106/29
99-09-2	3-Nitroaniline	ND		2160	1150	53	951	44	19	29-85/31
100-01-6	4-Nitroaniline	ND		2160	958	44*	819	38*	16	49-104/31
91-20-3	Naphthalene	51.2	J	2160	1560	70	1160	52*	29	54-93/32
98-95-3	Nitrobenzene	ND		2160	1570	73	1170	55	29	53-92/32
62-75-9	N-Nitrosodimethylamine	ND		2160	1480	69	1100	51	29	37-88/34
621-64-7	N-Nitroso-di-n-propylamine	ND		2160	1530	71	1140	53	29*	49-94/28
86-30-6	N-Nitrosodiphenylamine	ND		2160	1540	71	1250	58	21	53-107/28
85-01-8	Phenanthrene	132	J	2160	1800	77	1440	61	22	61-103/32
129-00-0	Pyrene	1240		2160	3020	82	2450	57*	21	58-109/33
110-86-1	Pyridine	ND		2160	1100	51	765	36	36	30-68/38
120-82-1	1,2,4-Trichlorobenzene	ND		2160	1370	63	975	46*	34*	52-93/32

Matrix Spike/Matrix Spike Duplicate Summary

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Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37356-MS	X018578.D	1	06/03/11	FS	05/28/11	OP37356	SX916
OP37356-MSD	X018579.D	1	06/03/11	FS	05/28/11	OP37356	SX916
F82575-14	X018577.D	1	06/03/11	FS	05/28/11	OP37356	SX916

The QC reported here applies to the following samples:

Method: SW846 8270D

F81835-1R

CAS No.	Surrogate Recoveries	MS	MSD	F82575-14	Limits
367-12-4	2-Fluorophenol	66%	51%	61%	40-102%
4165-62-2	Phenol-d5	72%	57%	67%	41-100%
118-79-6	2,4,6-Tribromophenol	74%	62%	67%	42-108%
4165-60-0	Nitrobenzene-d5	76%	59%	72%	40-105%
321-60-8	2-Fluorobiphenyl	74%	60%	70%	43-107%
1718-51-0	Terphenyl-d14	82%	70%	80%	45-119%

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

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Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37412-MB	CC032228.D 1		06/05/11	RB	06/02/11	OP37412	GCC206

The QC reported here applies to the following samples:

Method: SW846 8151A

F81835-1R

CAS No.	Compound	Result	RL	MDL	Units	Q
94-75-7	2,4-D	ND	33	10	ug/kg	
93-72-1	2,4,5-TP (Silvex)	ND	3.3	1.1	ug/kg	
93-76-5	2,4,5-T	ND	3.3	1.1	ug/kg	
1918-00-9	Dicamba	ND	3.3	1.4	ug/kg	
88-85-7	Dinoseb	ND	83	17	ug/kg	
75-99-0	Dalapon	ND	170	33	ug/kg	
120-36-5	Dichloroprop	ND	33	12	ug/kg	
94-82-6	2,4-DB	ND	33	10	ug/kg	
93-65-2	MCPP	ND	3300	720	ug/kg	
94-74-6	MCPA	ND	3300	1100	ug/kg	
87-86-5	Pentachlorophenol	ND	3.3	0.79	ug/kg	

CAS No.	Surrogate Recoveries	Limits
19719-28-9	2,4-DCAA	92% ^a 40-140%

(a) Surrogate recoveries corrected for actual spike amount.

Method Blank Summary

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Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37412-MB	CC032272.D 1		06/07/11	RB	06/02/11	OP37412	GCC207

The QC reported here applies to the following samples:

Method: SW846 8151A

F81835-1R

CAS No.	Compound	Result	RL	MDL	Units	Q
94-75-7	2,4-D	ND	33	10	ug/kg	
93-72-1	2,4,5-TP (Silvex)	ND	3.3	1.1	ug/kg	
93-76-5	2,4,5-T	ND	3.3	1.1	ug/kg	
1918-00-9	Dicamba	ND	3.3	1.4	ug/kg	
88-85-7	Dinoseb	ND	83	17	ug/kg	
75-99-0	Dalapon	ND	170	33	ug/kg	
120-36-5	Dichloroprop	ND	33	12	ug/kg	
94-82-6	2,4-DB	ND	33	10	ug/kg	
93-65-2	MCPP	ND	3300	720	ug/kg	
94-74-6	MCPA	ND	3300	1100	ug/kg	
87-86-5	Pentachlorophenol	ND	3.3	0.79	ug/kg	

CAS No.	Surrogate Recoveries	Limits
19719-28-9	2,4-DCAA	90% ^a 40-140%

(a) Surrogate recoveries corrected for actual spike amount.

Method Blank Summary

Page 1 of 1

Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37428-MB	KK42916.D	1	06/06/11	RB	06/03/11	OP37428	GKK1453

The QC reported here applies to the following samples:

Method: SW846 8081B

F81835-1R

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	1.7	0.43	ug/kg	
319-84-6	alpha-BHC	ND	1.7	0.37	ug/kg	
319-85-7	beta-BHC	ND	1.7	0.37	ug/kg	
319-86-8	delta-BHC	ND	1.7	0.33	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	1.7	0.40	ug/kg	
5103-71-9	alpha-Chlordane	ND	1.7	0.37	ug/kg	
5103-74-2	gamma-Chlordane	ND	1.7	0.37	ug/kg	
60-57-1	Dieldrin	ND	1.7	0.37	ug/kg	
72-54-8	4,4'-DDD	ND	3.3	0.43	ug/kg	
72-55-9	4,4'-DDE	ND	3.3	0.40	ug/kg	
50-29-3	4,4'-DDT	ND	3.3	0.43	ug/kg	
72-20-8	Endrin	ND	3.3	0.40	ug/kg	
1031-07-8	Endosulfan sulfate	ND	3.3	0.37	ug/kg	
7421-93-4	Endrin aldehyde	ND	3.3	0.43	ug/kg	
53494-70-5	Endrin ketone	ND	3.3	0.37	ug/kg	
959-98-8	Endosulfan-I	ND	1.7	0.33	ug/kg	
33213-65-9	Endosulfan-II	ND	1.7	0.33	ug/kg	
76-44-8	Heptachlor	ND	1.7	0.40	ug/kg	
1024-57-3	Heptachlor epoxide	ND	1.7	0.33	ug/kg	
72-43-5	Methoxychlor	ND	3.3	0.67	ug/kg	
8001-35-2	Toxaphene	ND	83	33	ug/kg	

CAS No.	Surrogate Recoveries	Limits	
877-09-8	Tetrachloro-m-xylene	79%	46-122%
2051-24-3	Decachlorobiphenyl	95%	50-133%

Method Blank Summary

Page 1 of 1

Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37428-MB	TT29841.D	1	06/08/11	RB	06/03/11	OP37428	GTT947

The QC reported here applies to the following samples:

Method: SW846 8081B

F81835-1R

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	1.7	0.43	ug/kg	
319-84-6	alpha-BHC	ND	1.7	0.37	ug/kg	
319-85-7	beta-BHC	ND	1.7	0.37	ug/kg	
319-86-8	delta-BHC	ND	1.7	0.33	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	1.7	0.40	ug/kg	
5103-71-9	alpha-Chlordane	ND	1.7	0.37	ug/kg	
5103-74-2	gamma-Chlordane	ND	1.7	0.37	ug/kg	
60-57-1	Dieldrin	ND	1.7	0.37	ug/kg	
72-54-8	4,4' -DDD	ND	3.3	0.43	ug/kg	
72-55-9	4,4' -DDE	ND	3.3	0.40	ug/kg	
50-29-3	4,4' -DDT	ND	3.3	0.43	ug/kg	
72-20-8	Endrin	ND	3.3	0.40	ug/kg	
1031-07-8	Endosulfan sulfate	ND	3.3	0.37	ug/kg	
7421-93-4	Endrin aldehyde	ND	3.3	0.43	ug/kg	
53494-70-5	Endrin ketone	ND	3.3	0.37	ug/kg	
959-98-8	Endosulfan-I	ND	1.7	0.33	ug/kg	
33213-65-9	Endosulfan-II	ND	1.7	0.33	ug/kg	
76-44-8	Heptachlor	ND	1.7	0.40	ug/kg	
1024-57-3	Heptachlor epoxide	ND	1.7	0.33	ug/kg	
72-43-5	Methoxychlor	ND	3.3	0.67	ug/kg	
8001-35-2	Toxaphene	ND	83	33	ug/kg	

CAS No.	Surrogate Recoveries	Limits	
877-09-8	Tetrachloro-m-xylene	79%	46-122%
2051-24-3	Decachlorobiphenyl	105%	50-133%

Method Blank Summary

Page 1 of 1

Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37428-MB	KK42961.D	1	06/08/11	RB	06/03/11	OP37428	GKK1455

The QC reported here applies to the following samples:

Method: SW846 8081B

F81835-1R

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	1.7	0.43	ug/kg	
319-84-6	alpha-BHC	ND	1.7	0.37	ug/kg	
319-85-7	beta-BHC	ND	1.7	0.37	ug/kg	
319-86-8	delta-BHC	ND	1.7	0.33	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	1.7	0.40	ug/kg	
5103-71-9	alpha-Chlordane	ND	1.7	0.37	ug/kg	
5103-74-2	gamma-Chlordane	ND	1.7	0.37	ug/kg	
60-57-1	Dieldrin	ND	1.7	0.37	ug/kg	
72-54-8	4,4'-DDD	ND	3.3	0.43	ug/kg	
72-55-9	4,4'-DDE	ND	3.3	0.40	ug/kg	
50-29-3	4,4'-DDT	ND	3.3	0.43	ug/kg	
72-20-8	Endrin	ND	3.3	0.40	ug/kg	
1031-07-8	Endosulfan sulfate	ND	3.3	0.37	ug/kg	
7421-93-4	Endrin aldehyde	ND	3.3	0.43	ug/kg	
53494-70-5	Endrin ketone	ND	3.3	0.37	ug/kg	
959-98-8	Endosulfan-I	ND	1.7	0.33	ug/kg	
33213-65-9	Endosulfan-II	ND	1.7	0.33	ug/kg	
76-44-8	Heptachlor	ND	1.7	0.40	ug/kg	
1024-57-3	Heptachlor epoxide	ND	1.7	0.33	ug/kg	
72-43-5	Methoxychlor	ND	3.3	0.67	ug/kg	
8001-35-2	Toxaphene	ND	83	33	ug/kg	

CAS No.	Surrogate Recoveries	Limits	
877-09-8	Tetrachloro-m-xylene	94%	46-122%
2051-24-3	Decachlorobiphenyl	117%	50-133%

Method Blank Summary

Page 1 of 1

Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

(a)	Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
	OP37428-MB	KK42990.D	1	06/10/11	RB	06/03/11	OP37428	GKK1456

The QC reported here applies to the following samples:

Method: SW846 8081B

F81835-1R

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	1.7	0.43	ug/kg	
319-84-6	alpha-BHC	ND	1.7	0.37	ug/kg	
319-85-7	beta-BHC	ND	1.7	0.37	ug/kg	
319-86-8	delta-BHC	ND	1.7	0.33	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	1.7	0.40	ug/kg	
5103-71-9	alpha-Chlordane	ND	1.7	0.37	ug/kg	
5103-74-2	gamma-Chlordane	ND	1.7	0.37	ug/kg	
60-57-1	Dieldrin	ND	1.7	0.37	ug/kg	
72-54-8	4,4' -DDD	ND	3.3	0.43	ug/kg	
72-55-9	4,4' -DDE	ND	3.3	0.40	ug/kg	
50-29-3	4,4' -DDT	ND	3.3	0.43	ug/kg	
72-20-8	Endrin	ND	3.3	0.40	ug/kg	
1031-07-8	Endosulfan sulfate	ND	3.3	0.37	ug/kg	
7421-93-4	Endrin aldehyde	ND	3.3	0.43	ug/kg	
53494-70-5	Endrin ketone	ND	3.3	0.37	ug/kg	
959-98-8	Endosulfan-I	ND	1.7	0.33	ug/kg	
33213-65-9	Endosulfan-II	ND	1.7	0.33	ug/kg	
76-44-8	Heptachlor	ND	1.7	0.40	ug/kg	
1024-57-3	Heptachlor epoxide	ND	1.7	0.33	ug/kg	
72-43-5	Methoxychlor	ND	3.3	0.67	ug/kg	
8001-35-2	Toxaphene	ND	83	33	ug/kg	

CAS No.	Surrogate Recoveries	Limits
877-09-8	Tetrachloro-m-xylene	87% 46-122%
2051-24-3	Decachlorobiphenyl	98% 50-133%

(a) SAMPLE NOT YET APPROVED BY LAB. DO NOT REPORT.

Blank Spike Summary

Page 1 of 1

Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37412-BS ^a	CC032227.D 1		06/05/11	RB	06/02/11	OP37412	GCC206

The QC reported here applies to the following samples:

Method: SW846 8151A

F81835-1R

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
94-75-7	2,4-D	167	160	96	40-140
93-72-1	2,4,5-TP (Silvex)	16.7	16.0	96	40-140
93-76-5	2,4,5-T	16.7	16.5	100	40-140
1918-00-9	Dicamba	16.7	15.0	90	40-140
88-85-7	Dinoseb	83.3	70.8	84	10-140
75-99-0	Dalapon	417	239	57	20-140
120-36-5	Dichloroprop	167	191	104	40-140
94-82-6	2,4-DB	167	151	90	40-140
93-65-2	MCP	16700	15800	95	40-140
94-74-6	MCPA	16700	15900	95	40-140
87-86-5	Pentachlorophenol	16.7	15.3	92	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
19719-28-9	2,4-DCAA	90% ^b	40-140%

(a) Spike recoveries corrected for actual spike amount.

(b) Surrogate recoveries corrected for actual spike amount.

Blank Spike Summary

Page 1 of 1

Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37428-BS	KK42915.D	1	06/06/11	RB	06/03/11	OP37428	GKK1453

The QC reported here applies to the following samples:

Method: SW846 8081B

F81835-1R

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
309-00-2	Aldrin	16.7	12.9	77	57-118
319-84-6	alpha-BHC	16.7	13.3	80	65-116
319-85-7	beta-BHC	16.7	13.5	81	63-124
319-86-8	delta-BHC	16.7	10.8	65	41-127
58-89-9	gamma-BHC (Lindane)	16.7	13.3	80	68-121
5103-71-9	alpha-Chlordane	16.7	13.9	83	69-120
5103-74-2	gamma-Chlordane	16.7	14.3	86	70-123
60-57-1	Dieldrin	16.7	13.7	82	69-122
72-54-8	4,4'-DDD	16.7	14.0	84	63-135
72-55-9	4,4'-DDE	16.7	13.9	83	66-127
50-29-3	4,4'-DDT	16.7	14.7	88	66-142
72-20-8	Endrin	16.7	13.3	80	69-135
1031-07-8	Endosulfan sulfate	16.7	13.8	83	61-126
7421-93-4	Endrin aldehyde	16.7	12.6	76	5-113
53494-70-5	Endrin ketone	16.7	14.7	88	64-135
959-98-8	Endosulfan-I	16.7	13.5	81	68-119
33213-65-9	Endosulfan-II	16.7	14.1	85	65-124
76-44-8	Heptachlor	16.7	13.7	82	65-123
1024-57-3	Heptachlor epoxide	16.7	13.6	82	69-117
72-43-5	Methoxychlor	16.7	14.9	89	66-139

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	82%	46-122%
2051-24-3	Decachlorobiphenyl	93%	50-133%

Blank Spike Summary

Page 1 of 1

Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37428-BS	TT29840.D	1	06/08/11	RB	06/03/11	OP37428	GTT947

The QC reported here applies to the following samples:

Method: SW846 8081B

F81835-1R

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
309-00-2	Aldrin	16.7	13.3	80	57-118
319-84-6	alpha-BHC	16.7	13.5	81	65-116
319-85-7	beta-BHC	16.7	14.0	84	63-124
319-86-8	delta-BHC	16.7	10.6	64	41-127
58-89-9	gamma-BHC (Lindane)	16.7	13.6	82	68-121
5103-71-9	alpha-Chlordane	16.7	15.0	90	69-120
5103-74-2	gamma-Chlordane	16.7	14.8	89	70-123
60-57-1	Dieldrin	16.7	14.7	88	69-122
72-54-8	4,4' -DDD	16.7	14.4	86	63-135
72-55-9	4,4' -DDE	16.7	15.3	92	66-127
50-29-3	4,4' -DDT	16.7	19.9	119	66-142
72-20-8	Endrin	16.7	15.6	94	69-135
1031-07-8	Endosulfan sulfate	16.7	14.7	88	61-126
7421-93-4	Endrin aldehyde	16.7	11.8	71	5-113
53494-70-5	Endrin ketone	16.7	15.2	91	64-135
959-98-8	Endosulfan-I	16.7	14.1	85	68-119
33213-65-9	Endosulfan-II	16.7	15.5	93	65-124
76-44-8	Heptachlor	16.7	14.6	88	65-123
1024-57-3	Heptachlor epoxide	16.7	14.1	85	69-117
72-43-5	Methoxychlor	16.7	19.4	116	66-139

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	79%	46-122%
2051-24-3	Decachlorobiphenyl	102%	50-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37412-MS ^a	CC032231.D	1	06/05/11	RB	06/02/11	OP37412	GCC206
OP37412-MSD ^a	CC032232.D	1	06/05/11	RB	06/02/11	OP37412	GCC206
C16217-1	CC032230.D	1	06/05/11	RB	06/02/11	OP37412	GCC206

The QC reported here applies to the following samples:

Method: SW846 8151A

F81835-1R

CAS No.	Compound	C16217-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
94-75-7	2,4-D	ND		167	148	89	163	100	10	40-140/30
93-72-1	2,4,5-TP (Silvex)	5.4		16.7	21.5	96	24.7	118	14	40-140/30
93-76-5	2,4,5-T	ND		16.7	18.1	108	18.2	112	1	40-140/30
1918-00-9	Dicamba	ND		83.3	13.7	82	12.2	74	12	40-140/30
88-85-7	Dinoseb	ND		83.3	110	132	128	157*	15	10-140/30
75-99-0	Dalapon	ND		417	207	50	217	54	5	20-140/30
120-36-5	Dichloroprop	ND		167	187	112	202	123	8	40-140/30
94-82-6	2,4-DB	ND		167	142	86	148	90	4	40-140/30
93-65-2	MCPP	ND		16700	15600	93	17000	104	9	40-140/30
94-74-6	MCPA	ND		16700	15000	90	16200	100	8	40-140/30
87-86-5	Pentachlorophenol	2.3	J	16.7	15.7	80	16.4	86	4	40-140/30

CAS No.	Surrogate Recoveries	MS	MSD	C16217-1	Limits
19719-28-9	2,4-DCAA	96% ^b	100% ^b	118% ^b	40-140%

(a) Spike recoveries corrected for actual spike amount.

(b) Surrogate recoveries corrected for actual spike amount.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: F81835R
Account: CLNHNCR Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP37428-MS	TT29854.D	1	06/08/11	RB	06/03/11	OP37428	GTT947
OP37428-MSD	TT29855.D	1	06/08/11	RB	06/03/11	OP37428	GTT947
F82735-24 ^a	TT29853.D	1	06/08/11	RB	06/03/11	OP37428	GTT947
F82735-24 ^b	KK42963.D	4	06/08/11	RB	06/03/11	OP37428	GKK1455

The QC reported here applies to the following samples:

Method: SW846 8081B

F81835-1R

CAS No.	Compound	F82735-24 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
309-00-2	Aldrin	1.8 U		17.9	12.8	72	11.8	67	8	57-118/27
319-84-6	alpha-BHC	1.8 U		17.9	13.2	74	12.2	69	8	65-116/23
319-85-7	beta-BHC	1.8 U		17.9	12.4	69	11.4	65	8	63-124/20
319-86-8	delta-BHC	1.8 U		17.9	9.8	55	9.2	52	6	41-127/25
58-89-9	gamma-BHC (Lindane)	1.8 U		17.9	12.7	71	11.8	67*	7	68-121/22
5103-71-9	alpha-Chlordane	1.8 U		17.9	13.2	74	12.9	73	2	69-120/33
5103-74-2	gamma-Chlordane	1.8 U		17.9	12.8	72	12.3	70	4	70-123/34
60-57-1	Dieldrin	0.45	I	17.9	11.7	63*	11.3	62*	3	69-122/25
72-54-8	4,4'-DDD	3.6 U		17.9	16.2	91	16.1	91	1	63-135/28
72-55-9	4,4'-DDE	3.6 U		17.9	13.2	74	13.0	74	2	66-127/28
50-29-3	4,4'-DDT	14 U ^c		17.9	12.3	69	12.0	68	2	66-142/28
72-20-8	Endrin	3.6 U		17.9	14.1	79	13.8	78	2	69-135/24
1031-07-8	Endosulfan sulfate	3.6 U		17.9	14.6	82	14.3	81	2	61-126/25
7421-93-4	Endrin aldehyde	3.6 U		17.9	13.3	74	11.9	68	11	5-113/30
53494-70-5	Endrin ketone	3.6 U		17.9	15.8	89	15.5	88	2	64-135/23
959-98-8	Endosulfan-I	1.8 U		17.9	13.3	74	13.1	74	2	68-119/20
33213-65-9	Endosulfan-II	0.42	I	17.9	15.3	79	14.8	77	3	65-124/19
76-44-8	Heptachlor	7.2 U ^c		17.9	12.9	72	12.3	70	5	65-123/26
1024-57-3	Heptachlor epoxide	1.8 U		17.9	13.1	73	12.4	70	5	69-117/26
72-43-5	Methoxychlor	6.0 ^c	I	17.9	14.5	48*	14.6	49*	1	66-139/23

CAS No.	Surrogate Recoveries	MS	MSD	F82735-24	F82735-24	Limits
877-09-8	Tetrachloro-m-xylene	77%	72%	71%	78%	46-122%
2051-24-3	Decachlorobiphenyl	103%	102%	101%	97%	50-133%

- (a) All hits confirmed by dual column analysis.
(b) Dilution required due to matrix interference.
(c) Result is from Run #2.

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F81835R
Account: CLNHNCR - Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

QC Batch ID: MP20703
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 06/03/11

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.083	.0059	.0083	0.00017	<0.083

Associated samples MP20703: F81835-1R

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

7.1.1

7

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F81835R
 Account: CLNHNCR - Clean Harbors Env Svcs
 Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

QC Batch ID: MP20703
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 06/03/11 06/03/11

Metal	F82669-11		QC	Limits	F82669-11		Spikelot	% Rec	QC
	Original	DUP			Original	MS			
Mercury	0.033	0.044	28.6 (a)	0-20	0.033	0.37	0.291	115.8	80-120

Associated samples MP20703: F81835-1R

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F81835R
 Account: CLNHNCR - Clean Harbors Env Svcs
 Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

QC Batch ID: MP20703
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 06/03/11

Metal	F82669-11 Original MSD	Spikelot HGFLWS1	% Rec	MSD RPD	QC Limit
Mercury	0.033	0.36	0.287	114.1	2.7

Associated samples MP20703: F81835-1R

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F81835R
 Account: CLNHNCR - Clean Harbors Env Svcs
 Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

QC Batch ID: MP20703
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 06/03/11

Metal	BSP Result	Spikelot HGFLWS1	% Rec	QC Limits
Mercury	0.25	0.25	100.0	80-120

Associated samples MP20703: F81835-1R

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: F81835R
 Account: CLNHNCR - Clean Harbors Env Svcs
 Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

QC Batch ID: MP20703
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: ug/l

Prep Date: 06/03/11

Metal	F82669-11		QC	
	Original	SDL 1:5	%DIF	Limits

Mercury	0.365	0.00	100.0(a)	0-10
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Associated samples MP20703: F81835-1R

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

7.1.4

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BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F81835R
Account: CLNHNCR - Clean Harbors Env Svcs
Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

QC Batch ID: MP20706
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 06/03/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	1.2	1.2		
Antimony	1.0	.05	.1		
Arsenic	0.50	.05	.1	-0.035	<0.50
Barium	10	.2	.5	0.0050	<10
Beryllium	0.25	.005	.05		
Cadmium	0.20	.005	.05	-0.0050	<0.20
Calcium	250	2.5	5		
Chromium	0.50	.05	.05	0.10	<0.50
Cobalt	2.5	.05	.05		
Copper	1.3	.05	.1		
Iron	15	1.2	1.7		
Lead	1.0	.05	.05	-0.015	<1.0
Magnesium	250	2.5	5		
Manganese	0.75	.05	.05		
Molybdenum	2.5	.05	.05		
Nickel	2.0	.05	.05		
Potassium	500	2.5	25		
Selenium	1.0	.1	.2	0.015	<1.0
Silver	0.50	.05	.05	-0.015	<0.50
Sodium	500	43	55		
Strontium	0.50	.05	.05		
Thallium	0.50	.075	.13		
Tin	2.5	.05	.05		
Titanium	0.50	.05	.1		
Vanadium	2.5	.05	.05		
Zinc	1.0	.05	.25		

Associated samples MP20706: F81835-1R

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F81835R
 Account: CLNHNCR - Clean Harbors Env Svcs
 Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

QC Batch ID: MP20706
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date:

06/03/11

06/03/11

Metal	F82628-5 Original DUP		RPD	QC Limits	F82628-5 Original MS		Spikelot MPFLICP1	% Rec	QC Limits
Aluminum	anr								
Antimony	anr								
Arsenic	1.1	1.2	8.7	0-20	1.1	94.6	102	91.8	80-120
Barium	7.8	6.4	19.7	0-20	7.8	106	102	96.4	80-120
Beryllium	anr								
Cadmium	0.0	0.0048	200.0 (a)	0-20	0.0	2.3	2.55	90.3	80-120
Calcium	anr								
Chromium	2.8	3.0	6.9	0-20	2.8	12.6	10.2	96.2	80-120
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	2.5	2.3	8.3	0-20	2.5	26.8	25.5	95.4	80-120
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	0.12	0.20	50.0 (a)	0-20	0.12	90.1	102	88.3	80-120
Silver	0.0	0.0	NC	0-20	0.0	2.3	2.55	90.3	80-120
Sodium	anr								
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	anr								

Associated samples MP20706: F81835-1R

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F81835R
 Account: CLNHNCR - Clean Harbors Env Svcs
 Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

QC Batch ID: MP20706
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 06/03/11

Metal	F82628-5 Original	MSD	Spikelot MPFLICP1	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	1.1	96.8	106	90.6	2.3	20
Barium	7.8	110	106	96.8	3.7	20
Beryllium	anr					
Cadmium	0.0	2.4	2.64	90.9	4.3	20
Calcium	anr					
Chromium	2.8	12.7	10.6	93.8	0.8	20
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	2.5	27.1	26.4	93.2	1.1	20
Magnesium	anr					
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Potassium	anr					
Selenium	0.12	92.7	106	87.7	2.8	20
Silver	0.0	2.4	2.64	90.9	4.3	20
Sodium	anr					
Strontium						
Thallium	anr					
Tin						
Titanium						
Vanadium	anr					
Zinc	anr					

Associated samples MP20706: F81835-1R

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F81835R
 Account: CLNHNCR - Clean Harbors Env Svcs
 Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

QC Batch ID: MP20706
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 06/03/11

Metal	BSP Result	Spikelot MPFLICP1	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	101	100	101.0	80-120
Barium	109	100	109.0	80-120
Beryllium	anr			
Cadmium	2.6	2.5	104.0	80-120
Calcium	anr			
Chromium	10.7	10	107.0	80-120
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	24.4	25	97.6	80-120
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Potassium	anr			
Selenium	96.0	100	96.0	80-120
Silver	2.5	2.5	100.0	80-120
Sodium	anr			
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium	anr			
Zinc	anr			

Associated samples MP20706: F81835-1R

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: F81835R
 Account: CLNHNCR - Clean Harbors Env Svcs
 Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

QC Batch ID: MP20706
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: ug/l

Prep Date: 06/03/11

Metal	F82628-5 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	19.7	25.4	28.9 (a)	0-10
Barium	139	174	25.0 (a)	0-10
Beryllium	anr			
Cadmium	0.00	0.00	NC	0-10
Calcium	anr			
Chromium	49.2	63.0	28.0 (a)	0-10
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	43.5	47.5	9.2	0-10
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Potassium	anr			
Selenium	2.20	0.00	100.0(a)	0-10
Silver	0.00	0.00	NC	0-10
Sodium	anr			
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium	anr			
Zinc	anr			

Associated samples MP20706: F81835-1R

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

POST DIGESTATE SPIKE SUMMARY

Login Number: F81835R
 Account: CLNHNCR - Clean Harbors Env Svcs
 Project: CH2M Hill-Camp Lejeune; Jacksonville, NC

QC Batch ID: MP20706
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: ug/l

Prep Date:

06/03/11

Metal	Sample ml	Final ml	F82628-5 Raw	PS Corr.** ug/l	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic	9.8	10	19.7	19.306	107.7	0.2	5	100	88.4	80-120
Barium	9.8	10	139	136.22	364.9	0.2	12.5	250	91.5	80-120
Beryllium										
Cadmium	9.8	10	0	0	42.6	0.2	2.5	50	85.2	80-120
Calcium										
Chromium	9.8	10	49.2	48.216	91.9	0.2	2.5	50	87.4	80-120
Cobalt										
Copper										
Iron										
Lead	9.8	10	43.5	42.63	90.7	0.2	2.5	50	96.1	80-120
Magnesium										
Manganese										
Molybdenum										
Nickel										
Potassium										
Selenium	9.8	10	2.2	2.156	85.4	0.2	5	100	83.2	80-120
Silver	9.8	10	0	0	42.9	0.2	2.5	50	85.8	80-120
Sodium										
Strontium										
Thallium										
Tin										
Titanium										
Vanadium										
Zinc										

Associated samples MP20706: F81835-1R

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (**) Corr. sample result = Raw * (sample volume / final volume)
 (anr) Analyte not requested

Appendix I

Data Validation Summary Reports

HEXAVALENT CHROMIUM
USEPA Region IV - Level IV Review

Site: MCB Camp Lejeune, CTO-141 SDG #: 1012036

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: February 4, 2011

Laboratory: Empirical Laboratories, Nashville, Tennessee Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	MR17-IS10-3-5-10D	1012036-07	Soil
2	MR17-EB-120110-IS	1012036-16	Water
2MS	MR17-EB-120110-ISMS	1012036-16MS	Water
2MSD	MR17-EB-120110-ISMSD	1012036-16MSD	Water
3	MR17-IS11-4-6-10D	1012036-17	Soil
4	MR17-IS12-5-7-10D	1012036-18	Soil
4MS	MR17-IS12-5-7-10DMS	1012036-18MS	Soil
4MSD	MR17-IS12-5-7-10DMSD	1012036-18MSD	Soil
5	MR17-EB-120210-IS	1012036-29	Water

The USEPA "Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", October 2004, and professional judgment were used in evaluating the data in this summary report.

Holding Times - All samples were prepared and analyzed within 24 hours for water samples and 28 days for soil samples, with the exception of the following.

Sample	Date Sampled	Date Analyzed	# of Days	Qualifier
2	12/01/10	12/03/10	2	J/UJ

Calibration - The ICV and CCV %R values were acceptable.

Method and Calibration Blanks - The method blanks and continuing calibration blanks were free of contamination.

Field and Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. mg/L	Action Level mg/kg	Qualifier	Affected Samples
MR17-EB-120110-IS	None- ND	-	-	-	-
MR17-EB-120210-IS	None- ND	-	-	-	-

Matrix Spike/Matrix Spike Duplicate - The MS/MSD samples exhibited acceptable %R and RPD values.

LCS - The LCS samples exhibited acceptable %R values.

Field Duplicates - Field duplicate samples were not analyzed.

Compound Quantitation - No discrepancies were identified.

ANALYSIS DATA SHEET

MR17-IS10-3-5-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-07Sampled: 12/01/10 13:35Received: 12/03/10 08:30% Solids: 90.07

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
18540-29-9	Hexavalent Chromium		0.434	0.542	1.08	1	U	SW7196A	0L27001	12/27/10 13:14

uw
2/4/11

ANALYSIS DATA SHEET

MR17-EB-120110-IS

2

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012036-16Sampled: 12/01/10 16:05Received: 12/03/10 08:30% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
18540-29-9	Hexavalent Chromium		0.0100	0.0200	0.0250	1	H3C	WJ SW7196A	0L03007	12/03/10 11:32

NW
2/4/11

ANALYSIS DATA SHEET

MR17-IS11-4-6-10D

3

Laboratory: Empirical Laboratories, LLC

SDG: 1012036

Client: CH2M Hill, Inc.

Project: Lejeune CTO-141 UXO-17

Matrix: Solid

Laboratory ID: 1012036-17

Sampled: 12/02/10 08:50

Received: 12/03/10 08:30

% Solids: 85.87

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
18540-29-9	Hexavalent Chromium		0.453	0.566	1.13	1	U	SW7196A	0L27001	12/27/10 13:15

aw
2/4/11

ANALYSIS DATA SHEET

MR17-IS12-5-7-10D

4

Laboratory: Empirical Laboratories, LLC

SDG: 1012036

Client: CH2M Hill, Inc.

Project: Lejeune CTO-141 UXO-17

Matrix: Solid

Laboratory ID: 1012036-18

Sampled: 12/02/10 10:50

Received: 12/03/10 08:30

% Solids: 87.08

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
18540-29-9	Hexavalent Chromium		0.452	0.565	1.13	1	U	SW7196A	0L27001	12/27/10 13:16

lw
2/4/11

ANALYSIS DATA SHEET

MR17-EB-120210-IS

5

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012036-29Sampled: 12/02/10 15:00Received: 12/03/10 08:30% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
18540-29-9	Hexavalent Chromium		0.0100	0.0200	0.0250	1	U	SW7196A	0L03007	12/03/10 11:33

mw
2/4/11

HEXAVALENT CHROMIUM
USEPA Region IV - Level IV Review

Site: MCB Camp Lejeune, CTO-141 SDG #: 1012060

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: February 4, 2011

Laboratory: Empirical Laboratories, Nashville, Tennessee Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	MW17-MW10-10D	1012060-18	Water
1MS	MW17-MW10-10DMS	1012060-18MS	Water
1MSD	MW17-MW10-10DMSD	1012060-18MSD	Water
2	MW17-MW11-10D	1012060-19	Water
3	MW17-MW12-10D	1012060-20	Water
4	MW17-EB120610-MW	1012060-21	Water
5	MW17-FB120610-10D	1012060-22	Water
5MS	MW17-FB120610-10DMS	1012060-22MS	Water
5MSD	MW17-FB120610-10DMSD	1012060-22MSD	Water

The USEPA "Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", October 2004, and professional judgment were used in evaluating the data in this summary report.

Holding Times - All samples were prepared and analyzed within 24 hours for water samples.

Calibration - The ICV and CCV %R values were acceptable.

Method and Calibration Blanks - The method blanks and continuing calibration blanks were free of contamination.

Field and Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. mg/L	Action Level mg/kg	Qualifier	Affected Samples
MW17-EB120610-MW	None- ND	-	-	-	-
MW17-FB120610-MW	None- ND	-	-	-	-

Matrix Spike/Matrix Spike Duplicate - The MS/MSD samples exhibited acceptable %R and RPD values.

LCS - The LCS samples exhibited acceptable %R values.

Field Duplicates - Field duplicate samples were not analyzed.

Compound Quantitation - No discrepancies were identified.

ANALYSIS DATA SHEET

MW17-MW10-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: Ground WaterLaboratory ID: 1012060-18Sampled: 12/06/10 11:20Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
18540-29-9	Hexavalent Chromium		0.0100	0.0200	0.0250	1	U	SW7196A	0L07015	12/07/10 10:16

mw
2/4/11

ANALYSIS DATA SHEET

MW17-MW11-10D

2

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: Ground WaterLaboratory ID: 1012060-19Sampled: 12/06/10 12:25Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
18540-29-9	Hexavalent Chromium		0.0100	0.0200	0.0250	1	U	SW7196A	0L07015	12/07/10 10:41

NW
2/4/11

ANALYSIS DATA SHEET

MW17-MW12-10D

3

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: Ground WaterLaboratory ID: 1012060-20Sampled: 12/06/10 13:25Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
18540-29-9	Hexavalent Chromium		0.0100	0.0200	0.0250	1	U	SW7196A	0L07015	12/07/10 10:42

hw
2/4/11

ANALYSIS DATA SHEET

MW17-EB120610-MW

4

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012060-21Sampled: 12/06/10 13:45Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
18540-29-9	Hexavalent Chromium		0.0100	0.0200	0.0250	1	U	SW7196A	0L07015	12/07/10 10:43

mw
2/4/11

ANALYSIS DATA SHEET

MW17-FB120610-10D

5

Laboratory: Empirical Laboratories, LLC

SDG: 1012060

Client: CH2M Hill, Inc.

Project: Lejeune CTO-141 UXO-17

Matrix: Water

Laboratory ID: 1012060-22

Sampled: 12/06/10 14:00

Received: 12/07/10 08:40

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
18540-29-9	Hexavalent Chromium		0.0100	0.0200	0.0250	1	U	SW7196A	0L07015	12/07/10 10:44

mw
2/4/11

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, VA 23462

December 8, 2008
SDG# R2846560 and 0810050, CAS and CompuChem
MCB Camp Lejeune--TO-09 Landfill Firing Position 2

Dear Ms. Moore,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG # R2846560 and 0810050. The data validation was performed in accordance with the SW846 methods 8330 for explosives, 6850 and DOD Perchlorate Handbook for Perchlorate and 6010B/7471A for RCRA Metals and Mercury. Also used in the validation of these samples were The National Functional Guidelines for Organic Data Review (October, 1999), the National Functional Guidelines for Inorganic Data Review (October, 2004), as applicable, and good professional judgment. All areas of concern are discussed in the body of the report and a summary of data qualifications is provided.

Sample ID	Lab ID	Matrix	Perchlorate	Explosives	Metals
ASR2.212-FR2-DU01-SS01-08D	0810050-02	soil	X	X	X
ASR2.212-FR2-DU01-SS02-08D	0810050-03	soil	X	X	X
ASR2.212-FR2-DU01-SS03-08D	0810050-01	soil	X	X	X
ASR2.212-FR2-DU02-SS01-08D	0810050-04	soil	X	X	X
ASR2.212-FR2-DU02-SS01D-08D	0810050-05	soil	X	X	X
ASR2.212-FR2-DU02-SS02-08D	0810050-06	soil	X	X	X
ASR2.212-FR2-DU02-SS03-08D	0810050-07	soil	X	X	X
ASR2.212-FR2-DU03-SS01-08D	0810050-08	soil	X	X	X
ASR2.212-FR2-DU03-SS02-08D	0810050-09	soil	X	X	X
ASR2.212-FR2-DU03-SS03-08D	0810050-10	soil	X	X	X
ASR2.212-FR2-IS02-4-6-08D	0810050-11	soil	X	X	X
ASR2.212-FR2-IS01-3-5-08D	0810050-12	soil	X	X	X
ASR2.212-FR2-IS01D-3-5-08D	0810050-13	soil	X	X	X
ASR2.212-FR2-IS04-5-7-08D	0810050-14	soil	X	X	X
ASR2.212-FR2-DU01-SS03-08D MS	0810050-01MS	soil	X	X	X
ASR2.212-FR2-DU01-SS03-08D MSD	0810050-01MSD	soil	X	X	X

The following quality control samples were provided with this SDG: sample ASR2.212-FR2-DU02-SS01D-08D-field duplicate of sample ASR2.212-FR2-DU02-SS01-08D; sample ASR2.212-FR2-IS01D-3-5-08D-field duplicate of sample ASR2.212-FR2-IS01-3-5-08D.

The samples were evaluated based on the following criteria:

• Data Completeness	*
• Technical Holding Times	*
• HPLC Performance	*
• HPLC/MS Performance	*
• Initial/Continuing Calibrations	*
• CRI Standards	
• Interference Check Sample	*
• Blanks	
• Internal Standards	*
• Laboratory Control Samples	
• Matrix Spike Recoveries	
• Matrix Duplicate RPDs	*
• Post Digestion Spike Recoveries	NA
• Serial Dilutions	*
• Field Duplicates	
• Identification/Quantitation	*
• Reporting Limits	*

* - indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Perchlorate

No qualifications to the data were required.

Explosives

The LCS recoveries of tetryl and 1,3,5-trinitrobenzene were below the lower QC limits. Tetryl was rejected R in all samples and 1,3,5-trinitrobenzene was qualified as estimated UJ in all samples.

The MS/MSD recoveries of tetryl and 1,3,5-trinitrobenzene were below the lower QC limits. Tetryl was rejected R in all samples and 1,3,5-trinitrobenzene was qualified as estimated UJ in all samples.

Metals

The reporting limit standards exhibited low recoveries for arsenic and selenium. The reported non-detect results for these analytes were qualified as estimated UJ in all samples.

Blank contamination was noted that required qualification of mercury in the samples.

The MS/MSD exhibited low recovery for selenium. The analyte was qualified as estimated in all samples.

The field duplicate pair of samples ASR2.212.FR2-IS01-3-5, ASR2.212.FR2-IS01D-3-5 exhibited one analyte, chromium, for which the RPD was greater than 100%. Therefore, chromium was qualified as estimated J in both samples.

Specific Evaluation of Data

Data Completeness

Corrected form 2Bs were requested from the laboratory because the analytes arsenic and selenium were incorrectly reported as exhibiting 0% recovery in the CRI standards. The laboratory would not resubmit the forms because they said that the analytes did not have EPA criteria for those analytes. A second request was sent because validation criteria does apply. However, there was no response from the lab. Therefore, the validator calculated recoveries for the two analytes and hand-annotated the forms.

Technical Holding Times

According to chain of custody records, sampling was performed on 10/06-08/08 and samples were received at the laboratory 10/16/08. All sample preparation and analysis was performed within method holding time requirements.

CRI Standards

Metals

The CRI standard associated with the samples in this SDG exhibited low recoveries for the analytes arsenic (53.7%) and selenium (67.6%). The reported non-detect results for these analytes were flagged as estimated UJ in all samples (qualifier code OT).

Blanks

Metals

Negative contamination was present in all of the associated calibration blanks for the noted analyte.

Blank ID	Analyte	Concentration	Action Level	Q Flag	Q Code
CCB	Mercury	-0.141 ug/L	up to 10x IDL	J/UJ	BL

Results were qualified as noted in the following tables.

Sample ID	Analyte	Q Flag	Q Code
All samples	Mercury	J/UJ	BL

Laboratory Control Samples

Explosives

The laboratory control sample in this SDG exhibited non-compliant %Rs for the compounds tetryl and 1,3,5-trinitrobenzene. Specific action is noted in the following table.

LCS ID	Compound	Samples Affected	%R	Q Flag	Q Code
PKYLCS	tetryl	all samples	0%	R	BSL
	1,3,5-trinitrobenzene		23%	UJ	

Matrix Spike/Matrix Spike Duplicates

Explosives

The MS/MSD pair of sample ASR2.212.FR2-DU01-SS03 exhibited non-compliant %Rs for the compound tetryl and 1,3,5-trinitrobenzene. Specific action is noted in the following table.

MS/MSD ID	Compound	Samples Affected	%R	Q Flag	Q Code
ASR2.212.FR2-DU01-SS03	tetryl	all samples	0%/0%	R	MSL
	1,3,5-trinitrobenzene		42%/20%	UJ	

Metals

The matrix spike analyses of the sample ASR2.212.FR2-DU01-SS03 exhibited a non-compliant %R for one analyte. Specific action is noted in the following table.

MS/MSD	Analyte	Samples Affected	%R	Q Flag	Q Code
ASR2.212.FR2-DU01-SS03	selenium	all samples	61.2%	J/UJ	MSL

Field Duplicates

Metals

The field duplicate pair of samples ASR2.212.FR2-IS01-3-5, ASR2.212.FR2-IS01D-3-5 exhibited one analyte for which the RPD was greater than 100%. The reported positive results for chromium (102%) were qualified as estimated J in both samples.

Identification/Quantitation

Metals

All results reported between the IDL and the RL (B flagged by laboratory) were qualified as estimated J. No qualification code was required.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

Perchlorate

Sample ID	Compound	Results	Q-Flag	Q Code
No qualifications were required.				

Explosives

Sample ID	Compound	Results	Q-Flag	Q Code
All samples	tetryl	-	R	BSL*
All samples	1,3,5-trinitrobenzene	-	UJ	BSL*
All samples	tetryl	-	R	MSL
All samples	1,3,5-trinitrobenzene	-	UJ	MSL

* Note: qualifier code MSL was used on all samples

RCRA Metals

Sample ID	Analyte	Results	Q-Flag	Q Code
all samples	arsenic selenium	+/-	J/UJ	OT
all samples	mercury	+/-	J/UJ	BL
all samples	selenium	+/-	J/UJ	MSL
ASR2.212.FR2-IS01-3-5, ASR2.212.FR2-IS01D-3-5	chromium	+	J	FD
all samples	all analytes	+B	J	

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high

Inorganic Field/Lab Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X (10X for common laboratory contaminants) the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
RL-U	The sample result for the blank contaminant is less than the sample RL and the result is raised to the RL and flagged U.
R or J ₊	The blank contaminant concentration was greater than the RL and the sample result is greater than the RL but less than 10X the blank contaminant concentration. The reported results are flagged either as rejected R or biased high J ₊ based on the professional judgment of the validator. (see NFG, Rev. date 10/04, p. 17 for extracted blanks (PB))

Organic Field/Lab Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X (10X for common laboratory contaminants) the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
RL-U	The sample result for the blank contaminant is less than the sample RL but is less than 5X (10X for common laboratory contaminants) the blank value, so the result is raised to the RL and flagged U.
U	The sample result for the blank contaminant is greater than the sample RL but is less than 5X (10X for common laboratory contaminants) the blank value, so the result is flagged U at the reported value.

General Abbreviations

RL	reporting limit
Q Code	qualifier code
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - High Recovery
BSH	Blank Spike/LCS - Low Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%SOL	High moisture content

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, VA 23462

December 8, 2008
SDG# R2846561 and 0810059, CAS and CompuChem
MCB Camp Lejeune, North Carolina--TO-09 Landfill Firing Position 2

Dear Ms. Moore,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG # R2846561 and 0810059. The data validation was performed in accordance with the SW846 methods 8330 for explosives, 6850 and the DOD Perchlorate Handbook for Perchlorate and 6010B/7471A for RCRA Metals and Mercury. Also used in the validation of these samples were the National Functional Guidelines for Organic Data Review (October, 1999), the National Functional Guidelines for Inorganic Data Review (October, 2004), as applicable, and good professional judgment. All areas of concern are discussed in the body of the report and a summary of data qualifications is provided.

Sample ID	Lab ID	Matrix	Perchlorate	Explosives	Metals
ASR2.212-FR2-IS03-5-7-08D	0810059-01	soil	X	X	X
ASR2.212-FR2-IS03-5-7-08D MS	0810059-01MS	soil	X	X	X
ASR2.212-FR2-IS03-5-7-08D MSD	0810059-01MSD	soil	X	X	X

The samples were evaluated based on the following criteria:

- Data Completeness
- Technical Holding Times *
- HPLC Performance *
- HPLC/MS Performance *
- Initial/Continuing Calibrations *
- CRI Standards *
- Interference Check Sample *
- Blanks
- Internal Standards *
- Laboratory Control Samples
- Matrix Spike Recoveries
- Matrix Duplicate RPDs *
- Post Digestion Spike Recoveries *
- Serial Dilutions *
- Field Duplicates NA

- Identification/Quantitation
- Reporting Limits *
-

* - indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Perchlorate

No qualifications to the data were required.

Explosives

The LCS recoveries of tetryl and 1,3,5-trinitrobenzene were below the lower QC limits. Tetryl was rejected R in all samples and 1,3,5-trinitrobenzene was qualified as estimated UJ in all samples.

The MS/MSD recoveries of tetryl and 1,3,5-trinitrobenzene were below the lower QC limits. Tetryl was rejected R in all samples and 1,3,5-trinitrobenzene was qualified as estimated UJ in all samples.

Metals

Blank contamination was noted that required qualification of mercury in the samples.

The MS/MSD exhibited low recovery for selenium, arsenic and cadmium. The analytes were qualified as estimated in the sample.

Specific Evaluation of Data

Data Completeness

Corrected form 2Bs were requested from the laboratory because the analyte selenium was incorrectly reported as exhibiting 0% recovery in the CRI standard. The laboratory would not resubmit the forms because they said that the analytes did not have EPA criteria for those analytes. A second request was sent because validation criteria does apply. However, there was no response from the lab. Therefore, the validator calculated recoveries for the analyte and hand-annotated the form. One page of the mercury run log (Form 14) was missing from the data package. The raw run log was present so the page was not requested.

Technical Holding Times

According to chain of custody records, sampling was performed on 10/07/08 and samples were received at the laboratory 10/9/08. All sample preparation and analysis was performed within method holding time requirements.

Blanks

Metals

Negative contamination was present in all of the associated calibration blanks for the noted analyte.

Blank ID	Analyte	Concentration	Action Level	Q Flag	Q Code
CCB	Mercury	-0.141 ug/L	up to 10x IDL	J/UJ	BL

Results were qualified as noted in the following tables.

Sample ID	Analyte	Q Flag	Q Code
All samples	Mercury	J/UJ	BL

Laboratory Control Samples

Explosives

The laboratory control sample in this SDG exhibited non-compliant %Rs for the compounds tetryl and 1,3,5-trinitrobenzene. Specific action is noted in the following table.

LCS ID	Compound	Samples Affected	%R	Q Flag	Q Code
PDLLCS	tetryl	all samples	0%	R	BSL
	1,3,5-trinitrobenzene		0%	UJ	

Matrix Spike/Matrix Spike Duplicates

Explosives

The MS/MSD pair of sample ASR2.212.FR2-IS03-5-7 exhibited non-compliant %Rs for the compound tetryl and 1,3,5-trinitrobenzene. The analyte 1,3,5-trinitrobenzene was not rejected because the MSD exhibited an acceptable recovery for the compound. Specific action is noted in the following table.

MS/MSD ID	Compound	Samples Affected	%R	Q Flag	Q Code
ASR2.212.FR2-IS03-5-7	tetryl	all samples	0%/0%	R	MSL
	1,3,5-trinitrobenzene		0%	UJ	

Metals

The matrix spike analyses of the sample ASR2.212.FR2-IS03-5-7 exhibited non-compliant %Rs for three analytes. Specific action is noted in the following table.

MS/MSD	Analyte	Samples Affected	%R	Q Flag	Q Code
ASR2.212.FR2-IS03-5-7	selenium	all samples	57.8	J/UJ	MSL
	arsenic		64.3		
	cadmium		69.8		

Identification/Quantitation

Metals

All results reported between the IDL and the RL (B flagged by laboratory) were qualified as estimated J. No qualification code was required.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

Perchlorate

Sample ID	Compound	Results	Q-Flag	Q Code
No qualifications were required.				

Explosives

Sample ID	Compound	Results	Q-Flag	Q Code
All samples	tetryl	-	R	BSL*
All samples	1,3,5-trinitrobenzene	-	UJ	BSL*
All samples	tetryl	-	R	MSL
All samples	1,3,5-trinitrobenzene	-	UJ	MSL

* Note: qualifier code MSL was used on all samples

RCRA Metals

Sample ID	Analyte	Results	Q-Flag	Q Code
all samples	mercury	+/-	J/UJ	BL
all samples	selenium arsenic cadmium	+/-	J/UJ	MSL
all samples	all analytes	+B	J	

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high

Inorganic Field/Lab Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X (10X for common laboratory contaminants) the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
RL-U	The sample result for the blank contaminant is less than the sample RL and the result is raised to the RL and flagged U.
R or J ₊	The blank contaminant concentration was greater than the RL and the sample result is greater than the RL but less than 10X the blank contaminant concentration. The reported results are flagged either as rejected R or biased high J ₊ based on the professional judgment of the validator. (see NFG, Rev. date 10/04, p. 17 for extracted blanks (PB))

Organic Field/Lab Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X (10X for common laboratory contaminants) the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
RL-U	The sample result for the blank contaminant is less than the sample RL but is less than 5X (10X for common laboratory contaminants) the blank value, so the result is raised to the RL and flagged U.
U	The sample result for the blank contaminant is greater than the sample RL but is less than 5X (10X for common laboratory contaminants) the blank value, so the result is flagged U at the reported value.

General Abbreviations

RL	reporting limit
Q Code	qualifier code
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - High Recovery
BSH	Blank Spike/LCS - Low Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%SOL	High moisture content

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, VA 23462

December 8, 2008
SDG# R2846563 and 0810078, CAS and CompuChem
MCB Camp Lejeune, North Carolina–TO-09, Landfill Firing Position 2

Dear Ms. Moore,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG # R2846563 and 0810078. The data validation was performed in accordance with the SW846 methods 8330 for explosives, 6850 and DOD Perchlorate Handbook for Perchlorate and 6010B/7470A for RCRA Metals and Mercury. Also used in the validation of these samples were The National Functional Guidelines for Organic Data Review (October, 1999), the National Functional Guidelines for Inorganic Data Review (October, 2004), as applicable, and good professional judgment. All areas of concern are discussed in the body of the report and a summary of data qualifications is provided.

Sample ID	Lab ID	Matrix	Perchlorate	Explosives	Metals
ASR2.212-FR2-TW02-08D	0810078-01	water	X	X	X
ASR2.212-FR2-TW01-08D	0810078-02	water	X	X	X
ASR2.212-FR2-TW01D-08D	0810078-03	water	X	X	X
ASR2.212-FR2-TW04-08D	0810078-04	water	X	X	X
ASR2.212-FR2-TW03-08D	0810078-05	water	X	X	X
ASR2.212-FR2-EB100908	0810078-06	water	X	X	X
ASR2.212-FR2-TW02-08D MS	0810078-01MS	water	X	X	X
ASR2.212-FR2-TW02-08D MSD	0810078-01MSD	water	X	X	X

The following quality control samples were provided with this SDG: sample ASR2.212-FR2-TW01D-08D-field duplicate of sample ASR2.212-FR2-TW01-08D; and sample ASR2.212-FR2-EB100908-equipment blank. The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times *
- HPLC Performance *
- HPLC/MS Performance *
- Initial/Continuing Calibrations *
- CRI Standards
- Interference Check Sample *
- Blanks

- Internal Standards *
- Laboratory Control Samples *
- Matrix Spike Recoveries *
- Matrix Duplicate RPDs *
- Post Digestion Spike Recoveries NA
- Serial Dilutions
- Field Duplicates
- Identification/Quantitation
- Reporting Limits *

* - indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Perchlorate

No qualifications to the data were required.

Explosives

No qualifications to the data were required.

Metals

The CRI standard exhibited a recovery for arsenic that was above the QC limit and resulted in the qualification of the analyte as estimated in one field sample.

Blank contamination was noted that required qualification of mercury and chromium in the field samples.

The serial dilution exhibited a non-compliant %D for barium. The analyte was qualified as estimated in all samples.

The field duplicate pair of samples ASR2.212.FR2-TW01, ASR2.212.FR2-TW01D exhibited one analyte, lead, for which the RPD was greater than 100%. Therefore, chromium was qualified as estimated J/UJ in the field duplicate pair.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 10/09/08 and samples were received at the laboratory 10/10/08. All sample preparation and analysis was performed within method holding time requirements.

CRI Standards

Metals

The CRI standard associated with the samples in this SDG exhibited a high recovery for the analyte selenium (155.3%). All reported positive results for selenium, up to 2X the reporting limit, were flagged as estimated J in the samples (qualifier code OT).

Blanks

Metals

Contamination was noted in associated blanks and qualification was required in the associated samples. Required action is noted in the following tables.

Blank ID	Analyte	Concentration	Action Level	Q Flag	Q Code
CCB	mercury	-0.140 ug/L	up to 10x IDL	J/UJ	BL
ASR212.2.FR2-FB100608	chromium	1.1J ug/L	RL	U	BL

Sample ID	Analyte	Q Flag	Q Code
All samples	mercury	J/UJ	BL
ASR212.2.FR2-TW01D, ASR212.2.FR2-TW02, ASR212.2.FR2-TW04	chromium	U at RL	BL

Serial Dilution

Metals

The serial dilution analysis of the sample ASR2.212.FR2-TW02 exhibited a non-compliant %D for one analyte. Specific action is noted in the following table.

MS/MSD	Analyte	Samples Affected	%D	Q Flag	Q Code
ASR2.212.FR2-TW02	barium	all samples	21.2%	J/UJ	SD

Field Duplicates

Metals

The field duplicate pair of samples ASR2.212.FR2-TW01, ASR2.212.FR2-TW01D exhibited one analyte for which the RPD was greater than 100%. The reported positive and non-detect results for lead (200%) were qualified as estimated J or UJ in the field duplicate pair.

Identification/Quantitation

Metals

All results reported between the IDL and the RL (B flagged by laboratory) were qualified as estimated J. No qualification code was required.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

Perchlorate

Sample ID	Compound	Results	Q-Flag	Q Code
No qualifications were required.				

Explosives

Sample ID	Compound	Results	Q-Flag	Q Code
No qualifications were required				

RCRA Total Metals

Sample ID	Analyte	Results	Q-Flag	Q Code
all field samples	selenium	+ up 2X RL	J	OT
all field samples	mercury	+/-	J/UJ	BL
ASR2.212.FR2-TW01D, ASR2.212.FR2-TW02, ASR2.212.FR2-TW04	chromium	+J	U at RL	BL
all field samples	barium	+/-	J/UJ	SD
ASR2.212.FR2-TW01, ASR2.212.FR2-TW01D	lead	+/-	J/UJ	FD
all samples	all analytes	+B	J	

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high

Inorganic Field/Lab Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X (10X for common laboratory contaminants) the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
RL-U	The sample result for the blank contaminant is less than the sample RL and the result is raised to the RL and flagged U.
R or J ₊	The blank contaminant concentration was greater than the RL and the sample result is greater than the RL but less than 10X the blank contaminant concentration. The reported results are flagged either as rejected R or biased high J ₊ based on the professional judgment of the validator. (see NFG, Rev. date 10/04, p. 17 for extracted blanks (PB))

Organic Field/Lab Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X (10X for common laboratory contaminants) the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
RL-U	The sample result for the blank contaminant is less than the sample RL but is less than 5X (10X for common laboratory contaminants) the blank value, so the result is raised to the RL and flagged U.
U	The sample result for the blank contaminant is greater than the sample RL but is less than 5X (10X for common laboratory contaminants) the blank value, so the result is flagged U at the reported value.

General Abbreviations

RL	reporting limit
Q Code	qualifier code
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - High Recovery
BSH	Blank Spike/LCS - Low Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%SOL	High moisture content

**DATA VALIDATION SUMMARY REPORT
MCB CAMP LEJEUNE, NORTH CAROLINA**

Client: CH2M HILL, Inc.
SDG: A103584
Laboratory: Enco Laboratories, Orlando, Florida
Site: MCB Camp Lejeune, CTO-WE41
Date: August 19, 2011

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1*	MR17-TB072611	A103584-01	Water
2	MR17-EB072611	A103584-02	Water
3**	MR17-GW17-11C	A103584-03	Water
3MS*	MR17-GW17-11CMS	A103584-03MS	Water
3MSD*	MR17-GW17-11CMSD	A103584-03MSD	Water
4**	MR17-GW17D-11C	A103584-04	Water
5**	MR17-GW18-11C	A103584-05	Water
6†	MR17-GW05-11C	A103584-06	Water
6D†	MR17-GW05-11CD	A103584-06D	Water
7†	MR17-GW02-11C	A103584-07	Water
7MS†	MR17-GW02-11CMS	A103584-07MS	Water
7MSD†	MR17-GW02-11CMSD	A103584-07MSD	Water
7D†	MR17-GW02-11CD	A103584-07D	Water
7DMS†	MR17-GW02-11CDMS	A103584-07DMS	Water
7DMSD†	MR17-GW02-11CDMSD	A103584-07DMSD	Water
8†	MR17-GW03-11C	A103584-08	Water
8D†	MR17-GW03-11CD	A103584-08D	Water
9†	MR17-GW04-11C	A103584-09	Water
9D†	MR17-GW04-11CD	A103584-09D	Water

* - Analyzed for VOCs only

** - Analyzed for VOCs and SVOCs only

† - Analyzed for Hexavalent Chromium only

A full data validation was performed on the analytical data for seven water samples, one aqueous equipment blank sample, and one aqueous trip blank sample collected on July 26, 2011 by CH2M HILL at the MCB Camp Lejeune in North Carolina. The samples were analyzed under the Environmental Protection Agency (USEPA) "Test Methods for the Evaluation of Solid Waste, USEPA SW-846, Third Edition, September 1986, with revisions".

Specific method references are as follows:

Analysis

VOCs
SVOCs
T/D Hexavalent Chromium

Method References

USEPA SW-846 Method 8260B
USEPA SW-846 Method 8270D
USEPA SW-846 Method 7196A

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods, the USEPA National Functional Guidelines for Organic Data Review as follows:

- The USEPA “Contract Laboratories Program National Functional Guidelines for Organic Data Review,” October 1999;
- The USEPA “Contract Laboratories Program National Functional Guidelines for Inorganic Data Review,” October 2004;
- and the reviewer's professional judgment.

The following items/criteria were reviewed for this report:

Organics

- Holding times and sample preservation
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Duplicate (LCS/LCSD) recoveries
- Method blank and field blank contamination
- Gas Chromatography (GC)/Mass Spectroscopy (MS) tuning
- Initial and continuing calibration summaries
- Compound Quantitation
- Internal standard area and retention time summary forms
- Field Duplicate sample precision

Inorganics

- Holding times and sample preservation
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Duplicate (LCS/LCSD) recoveries
- Method blank and field blank contamination
- Initial and continuing calibration verifications
- Compound Quantitation
- ICP Serial Dilution
- Field Duplicate sample precision

Overall Usability Issues:

There were minor rejections of data. This data cannot be used in the decision-making process for this project.

- 2-Butanone and 4-methyl-2-pentanone were rejected in all VOC samples due to severely low initial calibration RRF values.

Overall the remaining data is acceptable for the intended purposes as qualified for the deficiencies detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedences of QC criteria.

Volatile Organic Compounds (VOC)

Holding Times

- All samples were analyzed within 14 days for preserved water samples.

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Samples

- The LCS samples exhibited acceptable %R values.

Method Blank

- The method blanks were free of contamination.

Field Blank

- Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
MR17-TB072611	None- ND	-	-	-	-
MR17-EB072611	Acetone	5	50	U	4

GC/MS Tuning

- All criteria were met.

Initial Calibration

- The initial calibrations exhibited acceptable %RSD and mean RRF values except the following.

ICAL Date	Compound	%RSD/RRF	Qualifier	Affected Samples
07/15/11	2-Butanone	0.038 RRF	J/R	All samples
	4-Methyl-2-pentanone	0.035 RRF	J/R	

Continuing Calibration

- The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
07/28/11	2-Butanone	0.034 RRF	None	See ICAL
	4-Methyl-2-pentanone	0.036 RRF	None	

Compound Quantitation

- All criteria were met.

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Field Duplicate Sample Precision

- Field duplicate results are summarized below.

VOC				
Compound	MR17-GW17-11C ug/L	MR17-GW17D-11C ug/L	RPD	Qualifier
None	ND	ND	-	-

Semivolatile Organics Compounds (SVOCs)

Holding Times

- All samples were extracted within 7 days for water samples and analyzed within 40 days.

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- A MS/MSD sample was not analyzed due to insufficient sample volume.

Laboratory Control Samples

- The LCS samples exhibited acceptable %R values.

Method Blank

- The method blanks were free of contamination.

Field Blank

- Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
MR17-EB072611	None- ND	-	-	-	-

GC/MS Tuning

- All criteria were met.

Initial Calibration

- The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration

- The continuing calibrations exhibited acceptable %D and RRF values.

Compound Quantitation

- All criteria were met.

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Field Duplicate Sample Precision

- Field duplicate results are summarized below.

SVOC				
Compound	MR17-GW17-11C ug/L	MR17-GW17D-11C ug/L	RPD	Qualifier
None	ND	ND	-	-

Total & Dissolved Hexavalent Chromium

Holding Times

- All samples were analyzed within 48 hours for hexavalent chromium.

Initial and Continuing Calibration

- All %R criteria were met.

Method Blank

- The method blanks were free of contamination.

Field Blank

- Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
MR17-EB072611	None- ND	-	-	-	-

Matrix Spike/Duplicate (MS/MSD) Recoveries

- The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Samples

- The LCS samples exhibited acceptable %R values.

Compound Quantitation

- All criteria were met.

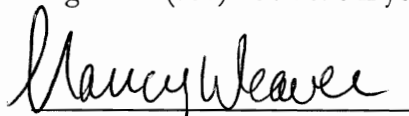
Field Duplicate Sample Precision

- Field duplicate samples were not analyzed.

Package Summary:

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:

A handwritten signature in cursive script, appearing to read "Nancy Weaver", is written over a horizontal line.

Nancy Weaver
Senior Chemist

Dated: 8/23/11

Data Qualifiers

- J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ = The analyte was not detected above the sample reporting limit; and the reporting limit is approximate.
- U = The analyte was analyzed for, but was not detected above the sample reporting limit.
- R = The sample results is rejected due to serious deficiencies. The presence or absence of the analyte cannot be verified.

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

MR17-TB072611

Laboratory:	ENCO Orlando	SDG:	CH025-013
Client:	CH2M Hill, Inc. (CH025)	Project:	MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
Matrix:	Ground Water	Laboratory ID:	A103584-01
		File ID:	3GW008.D
Sampled:	07/26/11 13:30	Prepared:	07/28/11 13:31
		Analyzed:	07/28/11 16:24
Solids:		Preparation:	EPA 5030B_MS
		Initial/Final:	5 mL / 5 mL
Batch:	1G28026	Sequence:	AA15970
		Calibration:	1107050
		Instrument:	OVGCMS3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	U	0.74	1.0	1.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	1.0
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	1.0
74-83-9	Bromomethane	1	<1.0	U	0.95	1.0	1.0
75-00-3	Chloroethane	1	<1.0	U	0.98	1.0	1.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.68	1.0	1.0
76-13-1	Freon 113	1	<1.0	U	0.73	1.0	1.0
67-64-1	Acetone	1	<12	U	1.8	12	12
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	1.0
75-15-0	Carbon disulfide	1	<5.0	U	1.9	5.0	5.0
75-09-2	Methylene Chloride	1	<5.0	U	0.69	5.0	5.0
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	U	0.60	1.0	1.0
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.72	1.0	1.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.49	1.0	1.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.57	1.0	1.0
78-93-3	2-Butanone	1	<12	U	4.5	12	12
67-66-3	Chloroform	1	<1.0	U	0.54	1.0	1.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	U	0.59	1.0	1.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	U	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	U	0.59	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	U	0.65	1.0	1.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.50	1.0	1.0
71-43-2	Benzene	1	<1.0	U	0.58	1.0	1.0
79-01-6	Trichloroethene	1	<1.0	U	0.55	1.0	1.0
78-87-5	1,2-Dichloropropane	1	<1.0	U	0.80	1.0	1.0
75-27-4	Bromodichloromethane	1	<1.0	U	0.49	1.0	1.0
108-10-1	4-Methyl-2-pentanone	1	<12	U	2.8	12	12
591-78-6	2-Hexanone	1	<2.5	U	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	U	0.59	1.0	1.0
108-88-3	Toluene	1	<1.0	U	0.58	1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	U	0.64	1.0	1.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.63	1.0	1.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	1.0
124-48-1	Dibromochloromethane	1	<1.0	U	0.44	1.0	1.0

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ORGANIC ANALYSIS DATA SHEET

EPA 8260B

MR17-TB072611

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-01 File ID: 3GW008.D
 Sampled: 07/26/11 13:30 Prepared: 07/28/11 13:31 Analyzed: 07/28/11 16:24
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G28026 Sequence: AA15970 Calibration: 1107050 Instrument: OVGCMS3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	1.0
108-90-7	Chlorobenzene	1	<1.0	U	0.51	1.0	1.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	1.0
108-38-3/106-4 2-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	2.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	1.0
75-25-2	Bromoform	1	<1.0	U	0.75	1.0	1.0
100-42-5	Styrene	1	<1.0	U	0.49	1.0	1.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	U	0.70	1.0	1.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.53	1.0	1.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.46	1.0	1.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.57	1.0	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<1.0	U	0.96	1.0	1.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	50.0	49	99	85 - 120	
4-Bromofluorobenzene	50.0	50	99	75 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1451580	11.5	1719098	11.51	
1,4-Difluorobenzene	1982185	12.08	2483672	12.09	
Chlorobenzene-d5	1788841	14.77	2147180	14.78	
1,4-Dichlorobenzene-d4	938181	17.17	1109635	17.18	

* Values outside of QC limits

nw 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR11-EB072611

EPA 8260B

2

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-02 File ID: 3GW009.D
 Sampled: 07/26/11 13:20 Prepared: 07/28/11 13:31 Analyzed: 07/28/11 16:54
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G28026 Sequence: AA15970 Calibration: 1107050 Instrument: OVGCMS3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	U	0.74	1.0	1.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	1.0
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	1.0
74-83-9	Bromomethane	1	<1.0	U	0.95	1.0	1.0
75-00-3	Chloroethane	1	<1.0	U	0.98	1.0	1.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.68	1.0	1.0
76-13-1	Freon 113	1	<1.0	U	0.73	1.0	1.0
67-64-1	Acetone	1	5.0	J	1.8	12	12
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	1.0
75-15-0	Carbon disulfide	1	<5.0	U	1.9	5.0	5.0
75-09-2	Methylene Chloride	1	<5.0	U	0.69	5.0	5.0
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	U	0.60	1.0	1.0
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.72	1.0	1.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.49	1.0	1.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.57	1.0	1.0
78-93-3	2-Butanone	1	<12	X	4.5	12	12
67-66-3	Chloroform	1	<1.0	U	0.54	1.0	1.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	U	0.59	1.0	1.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	U	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	U	0.59	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	U	0.65	1.0	1.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.50	1.0	1.0
71-43-2	Benzene	1	<1.0	U	0.58	1.0	1.0
79-01-6	Trichloroethene	1	<1.0	U	0.55	1.0	1.0
78-87-5	1,2-Dichloropropane	1	<1.0	U	0.80	1.0	1.0
75-27-4	Bromodichloromethane	1	<1.0	U	0.49	1.0	1.0
108-10-1	4-Methyl-2-pentanone	1	<12	X	2.8	12	12
591-78-6	2-Hexanone	1	<2.5	U	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	U	0.59	1.0	1.0
108-88-3	Toluene	1	<1.0	U	0.58	1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	U	0.64	1.0	1.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.63	1.0	1.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	1.0
124-48-1	Dibromochloromethane	1	<1.0	U	0.44	1.0	1.0

ORGANIC ANALYSIS DATA SHEET

MR11-EB072611

EPA 8260B

2

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-02 File ID: 3GW009.D
 Sampled: 07/26/11 13:20 Prepared: 07/28/11 13:31 Analyzed: 07/28/11 16:54
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G28026 Sequence: AA15970 Calibration: 1107050 Instrument: OVGCMS3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	1.0
108-90-7	Chlorobenzene	1	<1.0	U	0.51	1.0	1.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	1.0
108-38-3/106-4 2-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	2.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	1.0
75-25-2	Bromoform	1	<1.0	U	0.75	1.0	1.0
100-42-5	Styrene	1	<1.0	U	0.49	1.0	1.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	U	0.70	1.0	1.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.53	1.0	1.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.46	1.0	1.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.57	1.0	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<1.0	U	0.96	1.0	1.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	50.0	48	96	85 - 120	
4-Bromofluorobenzene	50.0	52	103	75 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1432573	11.5	1719098	11.51	
1,4-Difluorobenzene	1997581	12.07	2483672	12.09	
Chlorobenzene-d5	1705501	14.77	2147180	14.78	
1,4-Dichlorobenzene-d4	914404	17.17	1109635	17.18	

* Values outside of QC limits

nw 8/19/11

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

MR17-GW17-11C

3

Laboratory: ENCO Orlando SDG: CH025-013

Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41

Matrix: Ground Water Laboratory ID: A103584-03 File ID: 3GW007.D

Sampled: 07/26/11 09:50 Prepared: 07/28/11 13:31 Analyzed: 07/28/11 15:54

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1G28026 Sequence: AA15970 Calibration: 1107050 Instrument: OVGCM53

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	U	0.74	1.0	1.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	1.0
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	1.0
74-83-9	Bromomethane	1	<1.0	U	0.95	1.0	1.0
75-00-3	Chloroethane	1	<1.0	U	0.98	1.0	1.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.68	1.0	1.0
76-13-1	Freon 113	1	<1.0	U	0.73	1.0	1.0
67-64-1	Acetone	1	<12	U	1.8	12	12
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	1.0
75-15-0	Carbon disulfide	1	<5.0	U	1.9	5.0	5.0
75-09-2	Methylene Chloride	1	<5.0	U	0.69	5.0	5.0
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	U	0.60	1.0	1.0
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.72	1.0	1.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.49	1.0	1.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.57	1.0	1.0
78-93-3	2-Butanone	1	<12	U	4.5	12	12
67-66-3	Chloroform	1	<1.0	U	0.54	1.0	1.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	U	0.59	1.0	1.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	U	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	U	0.59	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	U	0.65	1.0	1.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.50	1.0	1.0
71-43-2	Benzene	1	<1.0	U	0.58	1.0	1.0
79-01-6	Trichloroethene	1	<1.0	U	0.55	1.0	1.0
78-87-5	1,2-Dichloropropane	1	<1.0	U	0.80	1.0	1.0
75-27-4	Bromodichloromethane	1	<1.0	U	0.49	1.0	1.0
108-10-1	4-Methyl-2-pentanone	1	<12	U	2.8	12	12
591-78-6	2-Hexanone	1	<2.5	U	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	U	0.59	1.0	1.0
108-88-3	Toluene	1	<1.0	U	0.58	1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	U	0.64	1.0	1.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.63	1.0	1.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	1.0
124-48-1	Dibromochloromethane	1	<1.0	U	0.44	1.0	1.0

ORGANIC ANALYSIS DATA SHEET

MR17-GW17-11C

EPA 8260B

3

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-03 File ID: 3GW007.D
 Sampled: 07/26/11 09:50 Prepared: 07/28/11 13:31 Analyzed: 07/28/11 15:54
 Solids: Preparation: EPA 5030B MS Initial/Final: 5 mL / 5 mL
 Batch: 1G28026 Sequence: AA15970 Calibration: 1107050 Instrument: OVGCM3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	1.0
108-90-7	Chlorobenzene	1	<1.0	U	0.51	1.0	1.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	1.0
108-38-3/106-4 2-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	2.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	1.0
75-25-2	Bromoform	1	<1.0	U	0.75	1.0	1.0
100-42-5	Styrene	1	<1.0	U	0.49	1.0	1.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	U	0.70	1.0	1.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.53	1.0	1.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.46	1.0	1.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.57	1.0	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<1.0	U	0.96	1.0	1.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	50.0	46	91	85 - 120	
4-Bromofluorobenzene	50.0	51	103	75 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1556624	11.5	1719098	11.51	
1,4-Difluorobenzene	2193177	12.08	2483672	12.09	
Chlorobenzene-d5	1865887	14.77	2147180	14.78	
1,4-Dichlorobenzene-d4	990493	17.17	1109635	17.18	

* Values outside of QC limits

nw 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW17D-11C

EPA 8260B

4

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-04 File ID: 3GW010.D
 Sampled: 07/26/11 10:00 Prepared: 07/28/11 13:31 Analyzed: 07/28/11 17:25
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G28026 Sequence: AA15970 Calibration: 1107050 Instrument: OVGCM53

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	U	0.74	1.0	1.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	1.0
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	1.0
74-83-9	Bromomethane	1	<1.0	U	0.95	1.0	1.0
75-00-3	Chloroethane	1	<1.0	U	0.98	1.0	1.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.68	1.0	1.0
76-13-1	Freon 113	1	<1.0	U	0.73	1.0	1.0
67-64-1	Acetone EBL	1	12449	X	1.8	12	12
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	1.0
75-15-0	Carbon disulfide	1	<5.0	U	1.9	5.0	5.0
75-09-2	Methylene Chloride	1	<5.0	U	0.69	5.0	5.0
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	U	0.60	1.0	1.0
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.72	1.0	1.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.49	1.0	1.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.57	1.0	1.0
78-93-3	2-Butanone IU	1	R <12	X	4.5	12	12
67-66-3	Chloroform	1	<1.0	U	0.54	1.0	1.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	U	0.59	1.0	1.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	U	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	U	0.59	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	U	0.65	1.0	1.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.50	1.0	1.0
71-43-2	Benzene	1	<1.0	U	0.58	1.0	1.0
79-01-6	Trichloroethene	1	<1.0	U	0.55	1.0	1.0
78-87-5	1,2-Dichloropropane	1	<1.0	U	0.80	1.0	1.0
75-27-4	Bromodichloromethane	1	<1.0	U	0.49	1.0	1.0
108-10-1	4-Methyl-2-pentanone IU	1	R <12	X	2.8	12	12
591-78-6	2-Hexanone	1	<2.5	U	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	U	0.59	1.0	1.0
108-88-3	Toluene	1	<1.0	U	0.58	1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	U	0.64	1.0	1.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.63	1.0	1.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	1.0
124-48-1	Dibromochloromethane	1	<1.0	U	0.44	1.0	1.0

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

MR17-GW17D-11C

4

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-04 File ID: 3GW010.D
 Sampled: 07/26/11 10:00 Prepared: 07/28/11 13:31 Analyzed: 07/28/11 17:25
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G28026 Sequence: AA15970 Calibration: 1107050 Instrument: OVGCM3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	1.0
108-90-7	Chlorobenzene	1	<1.0	U	0.51	1.0	1.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	1.0
108-38-3/106-4 2-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	2.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	1.0
75-25-2	Bromoform	1	<1.0	U	0.75	1.0	1.0
100-42-5	Styrene	1	<1.0	U	0.49	1.0	1.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	U	0.70	1.0	1.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.53	1.0	1.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.46	1.0	1.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.57	1.0	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<1.0	U	0.96	1.0	1.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	50.0	46	93	85 - 120	
4-Bromofluorobenzene	50.0	50	99	75 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1478341	11.5	1719098	11.51	
1,4-Difluorobenzene	2057102	12.08	2483672	12.09	
Chlorobenzene-d5	1827740	14.77	2147180	14.78	
1,4-Dichlorobenzene-d4	954107	17.16	1109635	17.18	

* Values outside of QC limits

NW 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW18-11C

EPA 8260B

5

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-05 File ID: 3GW011.D
 Sampled: 07/26/11 10:15 Prepared: 07/28/11 13:31 Analyzed: 07/28/11 17:56
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G28026 Sequence: AA15970 Calibration: 1107050 Instrument: OVGCM53

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	U	0.74	1.0	1.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	1.0
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	1.0
74-83-9	Bromomethane	1	<1.0	U	0.95	1.0	1.0
75-00-3	Chloroethane	1	<1.0	U	0.98	1.0	1.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.68	1.0	1.0
76-13-1	Freon 113	1	<1.0	U	0.73	1.0	1.0
67-64-1	Acetone	1	<12	U	1.8	12	12
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	1.0
75-15-0	Carbon disulfide	1	<5.0	U	1.9	5.0	5.0
75-09-2	Methylene Chloride	1	<5.0	U	0.69	5.0	5.0
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	U	0.60	1.0	1.0
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.72	1.0	1.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.49	1.0	1.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.57	1.0	1.0
78-93-3	2-Butanone <i>ICU</i>	1	<i>R</i> <12	<i>X</i>	4.5	12	12
67-66-3	Chloroform	1	<1.0	U	0.54	1.0	1.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	U	0.59	1.0	1.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	U	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	U	0.59	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	U	0.65	1.0	1.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.50	1.0	1.0
71-43-2	Benzene	1	<1.0	U	0.58	1.0	1.0
79-01-6	Trichloroethene	1	<1.0	U	0.55	1.0	1.0
78-87-5	1,2-Dichloropropane	1	<1.0	U	0.80	1.0	1.0
75-27-4	Bromodichloromethane	1	<1.0	U	0.49	1.0	1.0
108-10-1	4-Methyl-2-pentanone <i>ICU</i>	1	<i>R</i> <12	<i>X</i>	2.8	12	12
591-78-6	2-Hexanone	1	<2.5	U	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	U	0.59	1.0	1.0
108-88-3	Toluene	1	<1.0	U	0.58	1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	U	0.64	1.0	1.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.63	1.0	1.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	1.0
124-48-1	Dibromochloromethane	1	<1.0	U	0.44	1.0	1.0

ORGANIC ANALYSIS DATA SHEET

MR17-GW18-11C

EPA 8260B

5

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-05 File ID: 3GW011.D
 Sampled: 07/26/11 10:15 Prepared: 07/28/11 13:31 Analyzed: 07/28/11 17:56
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G28026 Sequence: AA15970 Calibration: 1107050 Instrument: OVGCM3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	1.0
108-90-7	Chlorobenzene	1	<1.0	U	0.51	1.0	1.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	1.0
108-38-3/106-4 2-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	2.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	1.0
75-25-2	Bromoform	1	<1.0	U	0.75	1.0	1.0
100-42-5	Styrene	1	<1.0	U	0.49	1.0	1.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	U	0.70	1.0	1.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.53	1.0	1.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.46	1.0	1.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.57	1.0	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<1.0	U	0.96	1.0	1.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	50.0	48	95	85 - 120	
4-Bromofluorobenzene	50.0	50	100	75 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1445661	11.5	1719098	11.51	
1,4-Difluorobenzene	2055161	12.08	2483672	12.09	
Chlorobenzene-d5	1817499	14.77	2147180	14.78	
1,4-Dichlorobenzene-d4	965145	17.17	1109635	17.18	

* Values outside of QC limits

LW 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR11-EB072611

EPA 8270D

2

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-02 File ID: 1h1020.D
 Sampled: 07/26/11 13:20 Prepared: 07/27/11 12:30 Analyzed: 08/01/11 18:58
 Solids: Preparation: EPA 3510C MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1G27015 Sequence: AA16000 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<5.0	U	2.6	5.0	10
108-95-2	Phenol	1	<6.0	U	1.7	6.0	10
111-44-4	Bis(2-chloroethyl)ether	1	<6.0	U	2.4	6.0	10
95-57-8	2-Chlorophenol	1	<6.0	U	3.6	6.0	10
95-48-7	2-Methylphenol	1	<6.0	U	1.6	6.0	10
39638-32-9	Bis(2-chloroisopropyl)ether	1	<6.0	U	2.4	6.0	10
98-86-2	Acetophenone	1	<6.0	U	4.8	6.0	10
108-39-4/106-4 4-5	3 & 4-Methylphenol	1	<6.0	U	3.5	6.0	10
621-64-7	N-Nitroso-di-n-propylamine	1	<6.0	U	2.6	6.0	10
67-72-1	Hexachloroethane	1	<6.0	U	1.6	6.0	10
98-95-3	Nitrobenzene	1	<6.0	U	2.6	6.0	10
78-59-1	Isophorone	1	<6.0	U	2.7	6.0	10
88-75-5	2-Nitrophenol	1	<6.0	U	4.2	6.0	10
105-67-9	2,4-Dimethylphenol	1	<6.0	U	3.0	6.0	10
111-91-1	Bis(2-chloroethoxy)methane	1	<6.0	U	2.4	6.0	10
120-83-2	2,4-Dichlorophenol	1	<6.0	U	4.0	6.0	10
91-20-3	Naphthalene	1	<6.0	U	2.1	6.0	10
106-47-8	4-Chloroaniline	1	<6.0	U	2.4	6.0	10
87-68-3	Hexachlorobutadiene	1	<3.0	U	1.4	3.0	10
105-60-2	Caprolactam	1	<4.0	U	0.92	4.0	10
59-50-7	4-Chloro-3-methylphenol	1	<6.0	U	3.1	6.0	10
91-57-6	2-Methylnaphthalene	1	<3.0	U	2.1	3.0	10
77-47-4	Hexachlorocyclopentadiene	1	<3.0	U	1.1	3.0	10
95-94-3	1,2,4,5-Tetrachlorobenzene	1	<3.0	U	1.6	3.0	10
88-06-2	2,4,6-Trichlorophenol	1	<6.0	U	3.3	6.0	10
95-95-4	2,4,5-Trichlorophenol	1	<3.0	U	1.5	3.0	10
92-52-4	1,1'-Biphenyl	1	<5.0	U	2.5	5.0	10
91-58-7	2-Chloronaphthalene	1	<3.0	U	1.9	3.0	10
88-74-4	2-Nitroaniline	1	<6.0	U	2.5	6.0	10
131-11-3	Dimethylphthalate	1	<3.0	U	2.0	3.0	10
606-20-2	2,6-Dinitrotoluene	1	<3.0	U	2.4	3.0	10
208-96-8	Acenaphthylene	1	<3.0	U	2.3	3.0	10
99-09-2	3-Nitroaniline	1	<3.0	U	2.1	3.0	10
83-32-9	Acenaphthene	1	<3.0	U	2.1	3.0	10

ORGANIC ANALYSIS DATA SHEET

MR11-EB072611

EPA 8270D

2

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-02 File ID: 1h1020.D
 Sampled: 07/26/11 13:20 Prepared: 07/27/11 12:30 Analyzed: 08/01/11 18:58
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1G27015 Sequence: AA16000 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
51-28-5	2,4-Dinitrophenol	1	<6.0	U	3.3	6.0	10
100-02-7	4-Nitrophenol	1	<3.0	U	1.8	3.0	10
132-64-9	Dibenzofuran	1	<3.0	U	2.3	3.0	10
121-14-2	2,4-Dinitrotoluene	1	<3.0	U	2.1	3.0	10
58-90-2	2,3,4,6-Tetrachlorophenol	1	<3.0	U	1.6	3.0	10
84-66-2	Diethylphthalate	1	<3.0	U	2.1	3.0	10
7005-72-3	4-Chlorophenyl-phenylether	1	<3.0	U	1.9	3.0	10
86-73-7	Fluorene	1	<3.0	U	2.1	3.0	10
100-01-6	4-Nitroaniline	1	<3.0	U	2.2	3.0	10
534-52-1	2-Methyl-4,6-dinitrophenol	1	<6.0	U	4.3	6.0	10
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<6.0	U	3.8	6.0	10
101-55-3	4-Bromophenyl-phenylether	1	<3.0	U	1.4	3.0	10
118-74-1	Hexachlorobenzene	1	<3.0	U	1.2	3.0	10
1912-24-9	Atrazine	1	<5.0	U	2.6	5.0	10
87-86-5	Pentachlorophenol	1	<6.0	U	3.5	6.0	10
85-01-8	Phenanthrene	1	<3.0	U	1.5	3.0	10
120-12-7	Anthracene	1	<3.0	U	1.8	3.0	10
86-74-8	Carbazole	1	<3.0	U	1.9	3.0	10
84-74-2	Di-n-butylphthalate	1	<3.0	U	2.5	3.0	10
206-44-0	Fluoranthene	1	<3.0	U	2.5	3.0	10
129-00-0	Pyrene	1	<3.0	U	2.6	3.0	10
85-68-7	Butylbenzylphthalate	1	<6.0	U	3.4	6.0	10
91-94-1	3,3'-Dichlorobenzidine	1	<3.0	U	2.3	3.0	10
56-55-3	Benzo(a)anthracene	1	<3.0	U	2.3	3.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	1	<3.0	U	2.7	3.0	5.0
218-01-9	Chrysene	1	<3.0	U	2.5	3.0	10
117-84-0	Di-n-octylphthalate	1	<3.0	U	2.3	3.0	10
205-99-2	Benzo(b)fluoranthene	1	<3.0	U	2.0	3.0	10
207-08-9	Benzo(k)fluoranthene	1	<3.0	U	2.2	3.0	10
50-32-8	Benzo(a)pyrene	1	<3.0	U	2.2	3.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	1	<3.0	U	2.2	3.0	10
53-70-3	Dibenzo(a,h)anthracene	1	<3.0	U	1.9	3.0	10
191-24-2	Benzo(g,h,i)perylene	1	<3.0	U	2.2	3.0	10

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
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ORGANIC ANALYSIS DATA SHEET

EPA 8270D

MR11-EB072611

2

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-02 File ID: 1h1020.D
 Sampled: 07/26/11 13:20 Prepared: 07/27/11 12:30 Analyzed: 08/01/11 18:58
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1G27015 Sequence: AA16000 Calibration: 1108010 Instrument: OSVGCMS1

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	50.0	24	47	20 - 110	
Phenol-d5	50.0	16	32	10 - 115	
Nitrobenzene-d5	50.0	33	66	40 - 110	
2-Fluorobiphenyl	50.0	33	66	50 - 110	
2,4,6-Tribromophenol	50.0	36	71	40 - 125	
Terphenyl-d14	50.0	37	73	50 - 135	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	320829	7.026	293866	7.026	
Naphthalene-d8	1135365	8.602	997259	8.611	
Acenaphthene-d10	678560	10.809	634054	10.818	
Phenanthrene-d10	1145050	12.685	930851	12.696	
Chrysene-d12	822785	16.331	638137	16.341	
Perylene-d12	620129	19.195	443447	19.195	

* Values outside of QC limits

hw 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW17-11C

EPA 8270D

3

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-03 File ID: 1h1021.D
 Sampled: 07/26/11 09:50 Prepared: 07/27/11 12:30 Analyzed: 08/01/11 19:27
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1G27015 Sequence: AA16000 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<5.0	U	2.6	5.0	10
108-95-2	Phenol	1	<6.0	U	1.7	6.0	10
111-44-4	Bis(2-chloroethyl)ether	1	<6.0	U	2.4	6.0	10
95-57-8	2-Chlorophenol	1	<6.0	U	3.6	6.0	10
95-48-7	2-Methylphenol	1	<6.0	U	1.6	6.0	10
39638-32-9	Bis(2-chloroisopropyl)ether	1	<6.0	U	2.4	6.0	10
98-86-2	Acetophenone	1	<6.0	U	4.8	6.0	10
108-39-4/106-4 4-5	3 & 4-Methylphenol	1	<6.0	U	3.5	6.0	10
621-64-7	N-Nitroso-di-n-propylamine	1	<6.0	U	2.6	6.0	10
67-72-1	Hexachloroethane	1	<6.0	U	1.6	6.0	10
98-95-3	Nitrobenzene	1	<6.0	U	2.6	6.0	10
78-59-1	Isophorone	1	<6.0	U	2.7	6.0	10
88-75-5	2-Nitrophenol	1	<6.0	U	4.2	6.0	10
105-67-9	2,4-Dimethylphenol	1	<6.0	U	3.0	6.0	10
111-91-1	Bis(2-chloroethoxy)methane	1	<6.0	U	2.4	6.0	10
120-83-2	2,4-Dichlorophenol	1	<6.0	U	4.0	6.0	10
91-20-3	Naphthalene	1	<6.0	U	2.1	6.0	10
106-47-8	4-Chloroaniline	1	<6.0	U	2.4	6.0	10
87-68-3	Hexachlorobutadiene	1	<3.0	U	1.4	3.0	10
105-60-2	Caprolactam	1	<4.0	U	0.92	4.0	10
59-50-7	4-Chloro-3-methylphenol	1	<6.0	U	3.1	6.0	10
91-57-6	2-Methylnaphthalene	1	<3.0	U	2.1	3.0	10
77-47-4	Hexachlorocyclopentadiene	1	<3.0	U	1.1	3.0	10
95-94-3	1,2,4,5-Tetrachlorobenzene	1	<3.0	U	1.6	3.0	10
88-06-2	2,4,6-Trichlorophenol	1	<6.0	U	3.3	6.0	10
95-95-4	2,4,5-Trichlorophenol	1	<3.0	U	1.5	3.0	10
92-52-4	1,1'-Biphenyl	1	<5.0	U	2.5	5.0	10
91-58-7	2-Chloronaphthalene	1	<3.0	U	1.9	3.0	10
88-74-4	2-Nitroaniline	1	<6.0	U	2.5	6.0	10
131-11-3	Dimethylphthalate	1	<3.0	U	2.0	3.0	10
606-20-2	2,6-Dinitrotoluene	1	<3.0	U	2.4	3.0	10
208-96-8	Acenaphthylene	1	<3.0	U	2.3	3.0	10
99-09-2	3-Nitroaniline	1	<3.0	U	2.1	3.0	10
83-32-9	Acenaphthene	1	<3.0	U	2.1	3.0	10

ORGANIC ANALYSIS DATA SHEET

MR17-GW17-11C

EPA 8270D

3

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-03 File ID: 1h1021.D
 Sampled: 07/26/11 09:50 Prepared: 07/27/11 12:30 Analyzed: 08/01/11 19:27
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1G27015 Sequence: AA16000 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
51-28-5	2,4-Dinitrophenol	1	<6.0	U	3.3	6.0	10
100-02-7	4-Nitrophenol	1	<3.0	U	1.8	3.0	10
132-64-9	Dibenzofuran	1	<3.0	U	2.3	3.0	10
121-14-2	2,4-Dinitrotoluene	1	<3.0	U	2.1	3.0	10
58-90-2	2,3,4,6-Tetrachlorophenol	1	<3.0	U	1.6	3.0	10
84-66-2	Diethylphthalate	1	<3.0	U	2.1	3.0	10
7005-72-3	4-Chlorophenyl-phenylether	1	<3.0	U	1.9	3.0	10
86-73-7	Fluorene	1	<3.0	U	2.1	3.0	10
100-01-6	4-Nitroaniline	1	<3.0	U	2.2	3.0	10
534-52-1	2-Methyl-4,6-dinitrophenol	1	<6.0	U	4.3	6.0	10
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<6.0	U	3.8	6.0	10
101-55-3	4-Bromophenyl-phenylether	1	<3.0	U	1.4	3.0	10
118-74-1	Hexachlorobenzene	1	<3.0	U	1.2	3.0	10
1912-24-9	Atrazine	1	<5.0	U	2.6	5.0	10
87-86-5	Pentachlorophenol	1	<6.0	U	3.5	6.0	10
85-01-8	Phenanthrene	1	<3.0	U	1.5	3.0	10
120-12-7	Anthracene	1	<3.0	U	1.8	3.0	10
86-74-8	Carbazole	1	<3.0	U	1.9	3.0	10
84-74-2	Di-n-butylphthalate	1	<3.0	U	2.5	3.0	10
206-44-0	Fluoranthene	1	<3.0	U	2.5	3.0	10
129-00-0	Pyrene	1	<3.0	U	2.6	3.0	10
85-68-7	Butylbenzylphthalate	1	<6.0	U	3.4	6.0	10
91-94-1	3,3'-Dichlorobenzidine	1	<3.0	U	2.3	3.0	10
56-55-3	Benzo(a)anthracene	1	<3.0	U	2.3	3.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	1	<3.0	U	2.7	3.0	5.0
218-01-9	Chrysene	1	<3.0	U	2.5	3.0	10
117-84-0	Di-n-octylphthalate	1	<3.0	U	2.3	3.0	10
205-99-2	Benzo(b)fluoranthene	1	<3.0	U	2.0	3.0	10
207-08-9	Benzo(k)fluoranthene	1	<3.0	U	2.2	3.0	10
50-32-8	Benzo(a)pyrene	1	<3.0	U	2.2	3.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	1	<3.0	U	2.2	3.0	10
53-70-3	Dibenzo(a,h)anthracene	1	<3.0	U	1.9	3.0	10
191-24-2	Benzo(g,h,i)perylene	1	<3.0	U	2.2	3.0	10

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
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ORGANIC ANALYSIS DATA SHEET

MR17-GW17-11C

EPA 8270D

3

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-03 File ID: 1h1021.D
 Sampled: 07/26/11 09:50 Prepared: 07/27/11 12:30 Analyzed: 08/01/11 19:27
 Solids: Preparation: EPA 3510C MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1G27015 Sequence: AA16000 Calibration: 1108010 Instrument: OSVGCMS1

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	50.0	23	46	20 - 110	
Phenol-d5	50.0	16	32	10 - 115	
Nitrobenzene-d5	50.0	32	65	40 - 110	
2-Fluorobiphenyl	50.0	34	67	50 - 110	
2,4,6-Tribromophenol	50.0	43	86	40 - 125	
Terphenyl-d14	50.0	38	75	50 - 135	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	322080	7.026	293866	7.026	
Naphthalene-d8	1115334	8.602	997259	8.611	
Acenaphthene-d10	670095	10.809	634054	10.818	
Phenanthrene-d10	1114590	12.685	930851	12.696	
Chrysene-d12	788184	16.331	638137	16.341	
Perylene-d12	587265	19.195	443447	19.195	

* Values outside of QC limits

NW 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW17D-11C

EPA 8270D

4

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-04 File ID: 1h1022.D
 Sampled: 07/26/11 10:00 Prepared: 07/27/11 12:30 Analyzed: 08/01/11 19:56
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1G27015 Sequence: AA16000 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<5.0	U	2.6	5.0	10
108-95-2	Phenol	1	<6.0	U	1.7	6.0	10
111-44-4	Bis(2-chloroethyl)ether	1	<6.0	U	2.4	6.0	10
95-57-8	2-Chlorophenol	1	<6.0	U	3.6	6.0	10
95-48-7	2-Methylphenol	1	<6.0	U	1.6	6.0	10
39638-32-9	Bis(2-chloroisopropyl)ether	1	<6.0	U	2.4	6.0	10
98-86-2	Acetophenone	1	<6.0	U	4.8	6.0	10
108-39-4/106-4 4-5	3 & 4-Methylphenol	1	<6.0	U	3.5	6.0	10
621-64-7	N-Nitroso-di-n-propylamine	1	<6.0	U	2.6	6.0	10
67-72-1	Hexachloroethane	1	<6.0	U	1.6	6.0	10
98-95-3	Nitrobenzene	1	<6.0	U	2.6	6.0	10
78-59-1	Isophorone	1	<6.0	U	2.7	6.0	10
88-75-5	2-Nitrophenol	1	<6.0	U	4.2	6.0	10
105-67-9	2,4-Dimethylphenol	1	<6.0	U	3.0	6.0	10
111-91-1	Bis(2-chloroethoxy)methane	1	<6.0	U	2.4	6.0	10
120-83-2	2,4-Dichlorophenol	1	<6.0	U	4.0	6.0	10
91-20-3	Naphthalene	1	<6.0	U	2.1	6.0	10
106-47-8	4-Chloroaniline	1	<6.0	U	2.4	6.0	10
87-68-3	Hexachlorobutadiene	1	<3.0	U	1.4	3.0	10
105-60-2	Caprolactam	1	<4.0	U	0.92	4.0	10
59-50-7	4-Chloro-3-methylphenol	1	<6.0	U	3.1	6.0	10
91-57-6	2-Methylnaphthalene	1	<3.0	U	2.1	3.0	10
77-47-4	Hexachlorocyclopentadiene	1	<3.0	U	1.1	3.0	10
95-94-3	1,2,4,5-Tetrachlorobenzene	1	<3.0	U	1.6	3.0	10
88-06-2	2,4,6-Trichlorophenol	1	<6.0	U	3.3	6.0	10
95-95-4	2,4,5-Trichlorophenol	1	<3.0	U	1.5	3.0	10
92-52-4	1,1'-Biphenyl	1	<5.0	U	2.5	5.0	10
91-58-7	2-Chloronaphthalene	1	<3.0	U	1.9	3.0	10
88-74-4	2-Nitroaniline	1	<6.0	U	2.5	6.0	10
131-11-3	Dimethylphthalate	1	<3.0	U	2.0	3.0	10
606-20-2	2,6-Dinitrotoluene	1	<3.0	U	2.4	3.0	10
208-96-8	Acenaphthylene	1	<3.0	U	2.3	3.0	10
99-09-2	3-Nitroaniline	1	<3.0	U	2.1	3.0	10
83-32-9	Acenaphthene	1	<3.0	U	2.1	3.0	10

nw 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW17D-11C

EPA 8270D

4

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-04 File ID: 1h1022.D
 Sampled: 07/26/11 10:00 Prepared: 07/27/11 12:30 Analyzed: 08/01/11 19:56
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1G27015 Sequence: AA16000 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
51-28-5	2,4-Dinitrophenol	1	<6.0	U	3.3	6.0	10
100-02-7	4-Nitrophenol	1	<3.0	U	1.8	3.0	10
132-64-9	Dibenzofuran	1	<3.0	U	2.3	3.0	10
121-14-2	2,4-Dinitrotoluene	1	<3.0	U	2.1	3.0	10
58-90-2	2,3,4,6-Tetrachlorophenol	1	<3.0	U	1.6	3.0	10
84-66-2	Diethylphthalate	1	<3.0	U	2.1	3.0	10
7005-72-3	4-Chlorophenyl-phenylether	1	<3.0	U	1.9	3.0	10
86-73-7	Fluorene	1	<3.0	U	2.1	3.0	10
100-01-6	4-Nitroaniline	1	<3.0	U	2.2	3.0	10
534-52-1	2-Methyl-4,6-dinitrophenol	1	<6.0	U	4.3	6.0	10
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<6.0	U	3.8	6.0	10
101-55-3	4-Bromophenyl-phenylether	1	<3.0	U	1.4	3.0	10
118-74-1	Hexachlorobenzene	1	<3.0	U	1.2	3.0	10
1912-24-9	Atrazine	1	<5.0	U	2.6	5.0	10
87-86-5	Pentachlorophenol	1	<6.0	U	3.5	6.0	10
85-01-8	Phenanthrene	1	<3.0	U	1.5	3.0	10
120-12-7	Anthracene	1	<3.0	U	1.8	3.0	10
86-74-8	Carbazole	1	<3.0	U	1.9	3.0	10
84-74-2	Di-n-butylphthalate	1	<3.0	U	2.5	3.0	10
206-44-0	Fluoranthene	1	<3.0	U	2.5	3.0	10
129-00-0	Pyrene	1	<3.0	U	2.6	3.0	10
85-68-7	Butylbenzylphthalate	1	<6.0	U	3.4	6.0	10
91-94-1	3,3'-Dichlorobenzidine	1	<3.0	U	2.3	3.0	10
56-55-3	Benzo(a)anthracene	1	<3.0	U	2.3	3.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	1	<3.0	U	2.7	3.0	5.0
218-01-9	Chrysene	1	<3.0	U	2.5	3.0	10
117-84-0	Di-n-octylphthalate	1	<3.0	U	2.3	3.0	10
205-99-2	Benzo(b)fluoranthene	1	<3.0	U	2.0	3.0	10
207-08-9	Benzo(k)fluoranthene	1	<3.0	U	2.2	3.0	10
50-32-8	Benzo(a)pyrene	1	<3.0	U	2.2	3.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	1	<3.0	U	2.2	3.0	10
53-70-3	Dibenzo(a,h)anthracene	1	<3.0	U	1.9	3.0	10
191-24-2	Benzo(g,h,i)perylene	1	<3.0	U	2.2	3.0	10

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
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EPA 8270D

1

Laboratory:	<u>ENCO Orlando</u>	SDG:	<u>CH025-013</u>				
Client:	<u>CH2M Hill, Inc. (CH025)</u>	Project:	<u>MCB CamLej Site UXO-11 & UXO-17 CTO-WE41</u>				
Matrix:	<u>Ground Water</u>	Laboratory ID:	<u>A103584-04</u>	File ID:	<u>1h1022.D</u>		
Sampled:	<u>07/26/11 10:00</u>	Prepared:	<u>07/27/11 12:30</u>	Analyzed:	<u>08/01/11 19:56</u>		
Solids:		Preparation:	<u>EPA 3510C_MS</u>	Initial/Final:	<u>500 mL / 0.5 mL</u>		
Batch:	<u>1G27015</u>	Sequence:	<u>AA16000</u>	Calibration:	<u>1108010</u>	Instrument:	<u>OSVGCMS1</u>

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	50.0	26	53	20 - 110	
Phenol-d5	50.0	18	37	10 - 115	
Nitrobenzene-d5	50.0	37	74	40 - 110	
2-Fluorobiphenyl	50.0	39	79	50 - 110	
2,4,6-Tribromophenol	50.0	41	83	40 - 125	
Terphenyl-d14	50.0	37	73	50 - 135	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	264249	7.026	293866	7.026	
Naphthalene-d8	901613	8.602	997259	8.611	
Acenaphthene-d10	527015	10.809	634054	10.818	
Phenanthrene-d10	825833	12.685	930851	12.696	
Chrysene-d12	506311	16.322	638137	16.341	
Perylene-d12	354724	19.186	443447	19.195	

* Values outside of QC limits

NW 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW18-11C

EPA 8270D

Laboratory: ENCO Orlando SDG: CH025-013 5

Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41

Matrix: Ground Water Laboratory ID: A103584-05 File ID: 1h1023.D

Sampled: 07/26/11 10:15 Prepared: 07/27/11 12:30 Analyzed: 08/01/11 20:25

Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL

Batch: IG27015 Sequence: AA16000 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<5.0	U	2.6	5.0	10
108-95-2	Phenol	1	<6.0	U	1.7	6.0	10
111-44-4	Bis(2-chloroethyl)ether	1	<6.0	U	2.4	6.0	10
95-57-8	2-Chlorophenol	1	<6.0	U	3.6	6.0	10
95-48-7	2-Methylphenol	1	<6.0	U	1.6	6.0	10
39638-32-9	Bis(2-chloroisopropyl)ether	1	<6.0	U	2.4	6.0	10
98-86-2	Acetophenone	1	<6.0	U	4.8	6.0	10
108-39-4/106-4 4-5	3 & 4-Methylphenol	1	<6.0	U	3.5	6.0	10
621-64-7	N-Nitroso-di-n-propylamine	1	<6.0	U	2.6	6.0	10
67-72-1	Hexachloroethane	1	<6.0	U	1.6	6.0	10
98-95-3	Nitrobenzene	1	<6.0	U	2.6	6.0	10
78-59-1	Isophorone	1	<6.0	U	2.7	6.0	10
88-75-5	2-Nitrophenol	1	<6.0	U	4.2	6.0	10
105-67-9	2,4-Dimethylphenol	1	<6.0	U	3.0	6.0	10
111-91-1	Bis(2-chloroethoxy)methane	1	<6.0	U	2.4	6.0	10
120-83-2	2,4-Dichlorophenol	1	<6.0	U	4.0	6.0	10
91-20-3	Naphthalene	1	<6.0	U	2.1	6.0	10
106-47-8	4-Chloroaniline	1	<6.0	U	2.4	6.0	10
87-68-3	Hexachlorobutadiene	1	<3.0	U	1.4	3.0	10
105-60-2	Caprolactam	1	<4.0	U	0.92	4.0	10
59-50-7	4-Chloro-3-methylphenol	1	<6.0	U	3.1	6.0	10
91-57-6	2-Methylnaphthalene	1	<3.0	U	2.1	3.0	10
77-47-4	Hexachlorocyclopentadiene	1	<3.0	U	1.1	3.0	10
95-94-3	1,2,4,5-Tetrachlorobenzene	1	<3.0	U	1.6	3.0	10
88-06-2	2,4,6-Trichlorophenol	1	<6.0	U	3.3	6.0	10
95-95-4	2,4,5-Trichlorophenol	1	<3.0	U	1.5	3.0	10
92-52-4	1,1'-Biphenyl	1	<5.0	U	2.5	5.0	10
91-58-7	2-Chloronaphthalene	1	<3.0	U	1.9	3.0	10
88-74-4	2-Nitroaniline	1	<6.0	U	2.5	6.0	10
131-11-3	Dimethylphthalate	1	<3.0	U	2.0	3.0	10
606-20-2	2,6-Dinitrotoluene	1	<3.0	U	2.4	3.0	10
208-96-8	Acenaphthylene	1	<3.0	U	2.3	3.0	10
99-09-2	3-Nitroaniline	1	<3.0	U	2.1	3.0	10
83-32-9	Acenaphthene	1	<3.0	U	2.1	3.0	10

aw 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW18-11C

EPA 8270D

5

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-05 File ID: 1h1023.D
 Sampled: 07/26/11 10:15 Prepared: 07/27/11 12:30 Analyzed: 08/01/11 20:25
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1G27015 Sequence: AA16000 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
51-28-5	2,4-Dinitrophenol	1	<6.0	U	3.3	6.0	10
100-02-7	4-Nitrophenol	1	<3.0	U	1.8	3.0	10
132-64-9	Dibenzofuran	1	<3.0	U	2.3	3.0	10
121-14-2	2,4-Dinitrotoluene	1	<3.0	U	2.1	3.0	10
58-90-2	2,3,4,6-Tetrachlorophenol	1	<3.0	U	1.6	3.0	10
84-66-2	Diethylphthalate	1	<3.0	U	2.1	3.0	10
7005-72-3	4-Chlorophenyl-phenylether	1	<3.0	U	1.9	3.0	10
86-73-7	Fluorene	1	<3.0	U	2.1	3.0	10
100-01-6	4-Nitroaniline	1	<3.0	U	2.2	3.0	10
534-52-1	2-Methyl-4,6-dinitrophenol	1	<6.0	U	4.3	6.0	10
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<6.0	U	3.8	6.0	10
101-55-3	4-Bromophenyl-phenylether	1	<3.0	U	1.4	3.0	10
118-74-1	Hexachlorobenzene	1	<3.0	U	1.2	3.0	10
1912-24-9	Atrazine	1	<5.0	U	2.6	5.0	10
87-86-5	Pentachlorophenol	1	<6.0	U	3.5	6.0	10
85-01-8	Phenanthrene	1	<3.0	U	1.5	3.0	10
120-12-7	Anthracene	1	<3.0	U	1.8	3.0	10
86-74-8	Carbazole	1	<3.0	U	1.9	3.0	10
84-74-2	Di-n-butylphthalate	1	<3.0	U	2.5	3.0	10
206-44-0	Fluoranthene	1	<3.0	U	2.5	3.0	10
129-00-0	Pyrene	1	<3.0	U	2.6	3.0	10
85-68-7	Butylbenzylphthalate	1	<6.0	U	3.4	6.0	10
91-94-1	3,3'-Dichlorobenzidine	1	<3.0	U	2.3	3.0	10
56-55-3	Benzo(a)anthracene	1	<3.0	U	2.3	3.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	1	<3.0	U	2.7	3.0	5.0
218-01-9	Chrysene	1	<3.0	U	2.5	3.0	10
117-84-0	Di-n-octylphthalate	1	<3.0	U	2.3	3.0	10
205-99-2	Benzo(b)fluoranthene	1	<3.0	U	2.0	3.0	10
207-08-9	Benzo(k)fluoranthene	1	<3.0	U	2.2	3.0	10
50-32-8	Benzo(a)pyrene	1	<3.0	U	2.2	3.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	1	<3.0	U	2.2	3.0	10
53-70-3	Dibenzo(a,h)anthracene	1	<3.0	U	1.9	3.0	10
191-24-2	Benzo(g,h,i)perylene	1	<3.0	U	2.2	3.0	10

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
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ORGANIC ANALYSIS DATA SHEET

MR17-GW18-11C

EPA 8270D

Laboratory: ENCO Orlando SDG: CH025-013
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A103584-05 File ID: 1h1023.D
 Sampled: 07/26/11 10:15 Prepared: 07/27/11 12:30 Analyzed: 08/01/11 20:25
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1G27015 Sequence: AA16000 Calibration: 1108010 Instrument: OSVGCMS1

5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	50.0	21	42	20 - 110	
Phenol-d5	50.0	15	29	10 - 115	
Nitrobenzene-d5	50.0	31	61	40 - 110	
2-Fluorobiphenyl	50.0	33	65	50 - 110	
2,4,6-Tribromophenol	50.0	39	77	40 - 125	
Terphenyl-d14	50.0	35	70	50 - 135	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	312567	7.026	293866	7.026	
Naphthalene-d8	1063096	8.601	997259	8.611	
Acenaphthene-d10	643648	10.809	634054	10.818	
Phenanthrene-d10	1108041	12.684	930851	12.696	
Chrysene-d12	780146	16.331	638137	16.341	
Perylene-d12	587972	19.194	443447	19.195	

* Values outside of QC limits

NW 8/19/11

INORGANIC ANALYSIS DATA SHEET

MR11-EB072611

EPA 7196A

2

Laboratory: ENCO OrlandoSDG: CH025-013Client: CH2M Hill, Inc. (CH025)Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41Matrix: Ground WaterLaboratory ID: A103584-02File ID: 1G27019-1Sampled: 07/26/11 13:20Prepared: 07/27/11 12:10Analyzed: 07/27/11 12:15Solids: 0.00Preparation: NO PREPInitial/Final: 25 mL / 25 mLBatch: 1G27019

Sequence:

Calibration:

Instrument: OWETSSPEC2

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
1854-02-99	Hexavalent Chromium	<0.015	1	U	0.0054	0.015	0.030	EPA 7196A

uw 8/19/11

INORGANIC ANALYSIS DATA SHEET

MR11-GW05-11C

EPA 7196A

6

Laboratory: ENCO OrlandoSDG: CH025-013Client: CH2M Hill, Inc. (CH025)Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41Matrix: Ground WaterLaboratory ID: A103584-06File ID: 1G27019-1Sampled: 07/26/11 14:50Prepared: 07/27/11 12:10Analyzed: 07/27/11 12:15Solids: 0.00Preparation: NO PREPInitial/Final: 25 mL / 25 mLBatch: 1G27019

Sequence:

Calibration:

Instrument: OWETSSPEC2

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
1854-02-99	Hexavalent Chromium	<0.015	1	U	0.0054	0.015	0.030	EPA 7196A
1854-02-99	Hexavalent Chromium (dissolved)	<0.015	1	U	0.0054	0.015	0.030	EPA 7196A

NW 8/19/11

INORGANIC ANALYSIS DATA SHEET

MR11-GW02-11C

EPA 7196A

7

Laboratory: ENCO OrlandoSDG: CH025-013Client: CH2M Hill, Inc. (CH025)Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41Matrix: Ground WaterLaboratory ID: A103584-07File ID: 1G27019-1Sampled: 07/26/11 14:35Prepared: 07/27/11 12:10Analyzed: 07/27/11 12:15Solids: 0.00Preparation: NO PREPInitial/Final: 25 mL / 25 mLBatch: 1G27019

Sequence:

Calibration:

Instrument: OWETSSPEC2

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
1854-02-99	Hexavalent Chromium	<0.015	1	U	0.0054	0.015	0.030	EPA 7196A
1854-02-99	Hexavalent Chromium (dissolved)	<0.015	1	U	0.0054	0.015	0.030	EPA 7196A

nw 8/19/11

INORGANIC ANALYSIS DATA SHEET

MR11-GW03-11C

EPA 7196A

Laboratory: ENCO OrlandoSDG: CH025-013Client: CH2M Hill, Inc. (CH025)Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41Matrix: Ground WaterLaboratory ID: A103584-08File ID: 1G27019-1Sampled: 07/26/11 12:35Prepared: 07/27/11 12:10Analyzed: 07/27/11 12:15Solids: 0.00Preparation: NO PREPInitial/Final: 25 mL / 25 mLBatch: 1G27019

Sequence:

Calibration:

Instrument: OWETSSPEC2

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
1854-02-99	Hexavalent Chromium	<0.015	1	U	0.0054	0.015	0.030	EPA 7196A
1854-02-99	Hexavalent Chromium (dissolved)	<0.015	1	U	0.0054	0.015	0.030	EPA 7196A

LW 8/19/11

INORGANIC ANALYSIS DATA SHEET

MR11-GW04-11C

EPA 7196A

9

Laboratory: ENCO OrlandoSDG: CH025-013Client: CH2M Hill, Inc. (CH025)Project: MCB CamLej Site UXO-11 & UXO-17 CTO-WE41Matrix: Ground WaterLaboratory ID: A103584-09File ID: 1G27019-1Sampled: 07/26/11 15:20Prepared: 07/27/11 12:10Analyzed: 07/27/11 12:15Solids: 0.00Preparation: NO PREPInitial/Final: 25 mL / 25 mLBatch: 1G27019

Sequence:

Calibration:

Instrument: OWETSSPEC2

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
1854-02-99	Hexavalent Chromium	<0.015	1	U	0.0054	0.015	0.030	EPA 7196A
1854-02-99	Hexavalent Chromium (dissolved)	<0.015	1	U	0.0054	0.015	0.030	EPA 7196A

NW 8/19/11

**DATA VALIDATION SUMMARY REPORT
MCB CAMP LEJEUNE, NORTH CAROLINA**

Client: CH2M HILL, Inc.
SDG: A104132
Laboratory: Enco Laboratories, Orlando, Florida
Site: MCB Camp Lejeune, CTO-WE41
Date: August 19, 2011

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	MR17-EB072911	A104132-01	Water
2	MR17-GW13-11C	A104132-02	Water
3	MR17-EB072811	A104132-03	Water
4	MR17-GW16-11C	A104132-04	Water
4MS	MR17-GW16-11CMS	A104132-04MS	Water
4MSD	MR17-GW16-11CMSD	A104132-04MSD	Water
5	MR17-GW14-11C	A104132-05	Water
6	MR17-GW15-11C	A104132-06	Water
7	MR17-GW09-11C	A104132-07	Water
8*	MR17-TB072911	A104132-08	Water
9	MR17-GW11-11C	A104132-09	Water

* - Analyzed for VOCs only

A full data validation was performed on the analytical data for six water samples, two aqueous equipment blank samples, and one aqueous trip blank sample collected on July 28-29, 2011 by CH2M HILL at the MCB Camp Lejeune in North Carolina. The samples were analyzed under the Environmental Protection Agency (USEPA) "Test Methods for the Evaluation of Solid Waste, USEPA SW-846, Third Edition, September 1986, with revisions".

Specific method references are as follows:

Analysis

VOCs
SVOCs

Method References

USEPA SW-846 Method 8260B
USEPA SW-846 Method 8270D

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods, the USEPA National Functional Guidelines for Organic Data Review as follows:

- The USEPA "Contract Laboratories Program National Functional Guidelines for Organic Data Review," October 1999;
- and the reviewer's professional judgment.

The following items/criteria were reviewed for this report:

Organics

- Holding times and sample preservation
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Duplicate (LCS/LCSD) recoveries
- Method blank and field blank contamination
- Gas Chromatography (GC)/Mass Spectroscopy (MS) tuning
- Initial and continuing calibration summaries
- Compound Quantitation
- Internal standard area and retention time summary forms
- Field Duplicate sample precision

Overall Usability Issues:

There were minor rejections of data. This data cannot be used in the decision-making process for this project.

- 2-Butanone and 4-methyl-2-pentanone were rejected in all samples due to severely low initial calibration RRF values.

Overall the remaining data is acceptable for the intended purposes as qualified for the deficiencies detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedences of QC criteria.

Volatile Organic Compounds (VOC)

Holding Times

- All samples were analyzed within 14 days for preserved water samples.

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Samples

- The LCS samples exhibited acceptable %R values.

Method Blank

- The method blanks were free of contamination.

Field Blank

- Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
MR17-EB072911	None- ND	-	-	-	-
MR17-EB072811	Acetone	4.6	46	U	2
MR17-TB072911	None- ND	-	-	-	-

GC/MS Tuning

- All criteria were met.

Initial Calibration

- The initial calibrations exhibited acceptable %RSD and mean RRF values except the following.

ICAL Date	Compound	%RSD/RRF	Qualifier	Affected Samples
07/15/11	2-Butanone	0.038 RRF	J/R	All samples
	4-Methyl-2-pentanone	0.035 RRF	J/R	

Continuing Calibration

- The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
07/31/11	2-Butanone	0.038 RRF	None	See ICAL
	4-Methyl-2-pentanone	0.036 RRF	None	

Compound Quantitation

- All criteria were met.

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Field Duplicate Sample Precision

- Field duplicate samples were not analyzed.

Semivolatile Organics Compounds (SVOCs)

Holding Times

- All samples were extracted within 7 days for water samples and analyzed within 40 days.

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values except the following.

Sample ID	Surrogate	%R	Qualifier
1	2-Fluorobiphenyl	48%	None for one out per fraction

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD sample exhibited acceptable %R and RPD values except the following.

MS/MSD Sample ID	Compound	MS %R/MSD %R/ RPD	Qualifier
4	Hexachlorocyclopentadiene	OK/OK/48	None for RPD alone

Laboratory Control Samples

- The LCS samples exhibited acceptable %R values.

Method Blank

- The method blanks were free of contamination.

Field Blank

- Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
MR17-EB072911	None- ND	-	-	-	-
MR17-EB072811	None- ND	-	-	-	-

GC/MS Tuning

- All criteria were met.

Initial Calibration

- The initial calibrations exhibited acceptable %RSD and mean RRF values

Continuing Calibration

- The continuing calibrations exhibited acceptable %D and RRF values.

Compound Quantitation

- All criteria were met.

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

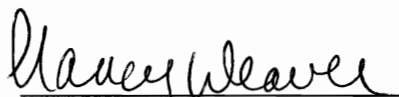
Field Duplicate Sample Precision

- Field duplicate samples were not analyzed.

Package Summary:

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:



Nancy Weaver
Senior Chemist

Dated: 8/23/11

Data Qualifiers

- J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ = The analyte was not detected above the sample reporting limit; and the reporting limit is approximate.
- U = The analyte was analyzed for, but was not detected above the sample reporting limit.
- R = The sample results is rejected due to serious deficiencies. The presence or absence of the analyte cannot be verified.

ORGANIC ANALYSIS DATA SHEET

MR17-EB072911

EPA 8260B

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-01 File ID: 3GZ008.D
 Sampled: 07/29/11 10:00 Prepared: 07/31/11 15:26 Analyzed: 07/31/11 18:07
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G31003 Sequence: AA15998 Calibration: 1107050 Instrument: OVGCMSS3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	U	0.74	1.0	1.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	1.0
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	1.0
74-83-9	Bromomethane	1	<1.0	U	0.95	1.0	1.0
75-00-3	Chloroethane	1	<1.0	U	0.98	1.0	1.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.68	1.0	1.0
76-13-1	Freon 113	1	<1.0	U	0.73	1.0	1.0
67-64-1	Acetone	1	<12	U	1.8	12	12
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	1.0
75-15-0	Carbon disulfide	1	<5.0	U	1.9	5.0	5.0
75-09-2	Methylene Chloride	1	<5.0	U	0.69	5.0	5.0
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	U	0.60	1.0	1.0
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.72	1.0	1.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.49	1.0	1.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.57	1.0	1.0
78-93-3	2-Butanone <i>ICL</i>	1	<12	<i>R✓</i>	4.5	12	12
67-66-3	Chloroform	1	<1.0	U	0.54	1.0	1.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	U	0.59	1.0	1.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	U	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	U	0.59	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	U	0.65	1.0	1.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.50	1.0	1.0
71-43-2	Benzene	1	<1.0	U	0.58	1.0	1.0
79-01-6	Trichloroethene	1	<1.0	U	0.55	1.0	1.0
78-87-5	1,2-Dichloropropane	1	<1.0	U	0.80	1.0	1.0
75-27-4	Bromodichloromethane	1	<1.0	U	0.49	1.0	1.0
108-10-1	4-Methyl-2-pentanone <i>ICL</i>	1	<12	<i>R✓</i>	2.8	12	12
591-78-6	2-Hexanone	1	<2.5	U	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	U	0.59	1.0	1.0
108-88-3	Toluene	1	<1.0	U	0.58	1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	U	0.64	1.0	1.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.63	1.0	1.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	1.0
124-48-1	Dibromochloromethane	1	<1.0	U	0.44	1.0	1.0

nw 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-EB072911

EPA 8260B

Laboratory: ENCO Orlando
 Client: CH2M Hill, Inc. (CH025)
 Matrix: Ground Water
 Sampled: 07/29/11 10:00
 Solids:
 Batch: 1G31003
 Sequence: AA15998
 Calibration: 1107050
 Instrument: OVGCM3
 SDG: CH025-021
 Project: MCB CamLej Site UXO-17 CTO-WE41
 Laboratory ID: A104132-01
 File ID: 3GZ008.D
 Prepared: 07/31/11 15:26
 Analyzed: 07/31/11 18:07
 Preparation: EPA 5030B_MS
 Initial/Final: 5 mL / 5 mL

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	1.0
108-90-7	Chlorobenzene	1	<1.0	U	0.51	1.0	1.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	1.0
108-38-3/106-4 2-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	2.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	1.0
75-25-2	Bromoform	1	<1.0	U	0.75	1.0	1.0
100-42-5	Styrene	1	<1.0	U	0.49	1.0	1.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	U	0.70	1.0	1.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.53	1.0	1.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.46	1.0	1.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.57	1.0	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<1.0	U	0.96	1.0	1.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	50.0	53	105	85 - 120	
4-Bromofluorobenzene	50.0	58	116	75 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1428391	11.5	1719098	11.51	
1,4-Difluorobenzene	1907426	12.08	2483672	12.09	
Chlorobenzene-d5	1672900	14.77	2147180	14.78	
1,4-Dichlorobenzene-d4	889681	17.17	1109635	17.18	

* Values outside of QC limits

new 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW13-11C

EPA 8260B

2

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-02 File ID: 3GZ009.D
 Sampled: 07/29/11 08:15 Prepared: 07/31/11 15:26 Analyzed: 07/31/11 18:37
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G31003 Sequence: AA15998 Calibration: 1107050 Instrument: OVGCM53

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	U	0.74	1.0	1.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	1.0
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	1.0
74-83-9	Bromomethane	1	<1.0	U	0.95	1.0	1.0
75-00-3	Chloroethane	1	<1.0	U	0.98	1.0	1.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.68	1.0	1.0
76-13-1	Freon 113	1	<1.0	U	0.73	1.0	1.0
67-64-1	Acetone	EBL	12.60	U	1.8	12	12
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	1.0
75-15-0	Carbon disulfide	1	<5.0	U	1.9	5.0	5.0
75-09-2	Methylene Chloride	1	<5.0	U	0.69	5.0	5.0
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	U	0.60	1.0	1.0
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.72	1.0	1.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.49	1.0	1.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.57	1.0	1.0
78-93-3	2-Butanone	ICU	<12	R	4.5	12	12
67-66-3	Chloroform	1	<1.0	U	0.54	1.0	1.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	U	0.59	1.0	1.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	U	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	U	0.59	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	U	0.65	1.0	1.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.50	1.0	1.0
71-43-2	Benzene	1	<1.0	U	0.58	1.0	1.0
79-01-6	Trichloroethene	1	<1.0	U	0.55	1.0	1.0
78-87-5	1,2-Dichloropropane	1	<1.0	U	0.80	1.0	1.0
75-27-4	Bromodichloromethane	1	<1.0	U	0.49	1.0	1.0
108-10-1	4-Methyl-2-pentanone	ICU	<12	R	2.8	12	12
591-78-6	2-Hexanone	1	<2.5	U	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	U	0.59	1.0	1.0
108-88-3	Toluene	1	<1.0	U	0.58	1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	U	0.64	1.0	1.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.63	1.0	1.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	1.0
124-48-1	Dibromochloromethane	1	<1.0	U	0.44	1.0	1.0

nw 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW13-11C

EPA 8260B

2

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-02 File ID: 3GZ009.D
 Sampled: 07/29/11 08:15 Prepared: 07/31/11 15:26 Analyzed: 07/31/11 18:37
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G31003 Sequence: AA15998 Calibration: 1107050 Instrument: OVGCMS3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	1.0
108-90-7	Chlorobenzene	1	<1.0	U	0.51	1.0	1.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	1.0
108-38-3/106-4 2-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	2.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	1.0
75-25-2	Bromoform	1	<1.0	U	0.75	1.0	1.0
100-42-5	Styrene	1	<1.0	U	0.49	1.0	1.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	U	0.70	1.0	1.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.53	1.0	1.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.46	1.0	1.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.57	1.0	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<1.0	U	0.96	1.0	1.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	50.0	52	104	85 - 120	
4-Bromofluorobenzene	50.0	57	113	75 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1408554	11.5	1719098	11.51	
1,4-Difluorobenzene	1902460	12.08	2483672	12.09	
Chlorobenzene-d5	1655745	14.77	2147180	14.78	
1,4-Dichlorobenzene-d4	897744	17.17	1109635	17.18	

* Values outside of QC limits

nw 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-EB072811

EPA 8260B

3

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-03 File ID: 3GZ010.D
 Sampled: 07/28/11 17:45 Prepared: 07/31/11 15:26 Analyzed: 07/31/11 19:08
 Solids: Preparation: EPA 5030B MS Initial/Final: 5 mL / 5 mL
 Batch: 1G31003 Sequence: AA15998 Calibration: 1107050 Instrument: OVGCMS3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	U	0.74	1.0	1.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	1.0
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	1.0
74-83-9	Bromomethane	1	<1.0	U	0.95	1.0	1.0
75-00-3	Chloroethane	1	<1.0	U	0.98	1.0	1.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.68	1.0	1.0
76-13-1	Freon 113	1	<1.0	U	0.73	1.0	1.0
67-64-1	Acetone	1	4.6	J	1.8	12	12
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	1.0
75-15-0	Carbon disulfide	1	<5.0	U	1.9	5.0	5.0
75-09-2	Methylene Chloride	1	<5.0	U	0.69	5.0	5.0
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	U	0.60	1.0	1.0
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.72	1.0	1.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.49	1.0	1.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.57	1.0	1.0
78-93-3	2-Butanone	1	<12	RV	4.5	12	12
67-66-3	Chloroform	1	<1.0	U	0.54	1.0	1.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	U	0.59	1.0	1.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	U	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	U	0.59	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	U	0.65	1.0	1.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.50	1.0	1.0
71-43-2	Benzene	1	<1.0	U	0.58	1.0	1.0
79-01-6	Trichloroethene	1	<1.0	U	0.55	1.0	1.0
78-87-5	1,2-Dichloropropane	1	<1.0	U	0.80	1.0	1.0
75-27-4	Bromodichloromethane	1	<1.0	U	0.49	1.0	1.0
108-10-1	4-Methyl-2-pentanone	1	<12	RV	2.8	12	12
591-78-6	2-Hexanone	1	<2.5	U	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	U	0.59	1.0	1.0
108-88-3	Toluene	1	<1.0	U	0.58	1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	U	0.64	1.0	1.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.63	1.0	1.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	1.0
124-48-1	Dibromochloromethane	1	<1.0	U	0.44	1.0	1.0

ORGANIC ANALYSIS DATA SHEET

MR17-EB072811

EPA 8260B

3

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-03 File ID: 3GZ010.D
 Sampled: 07/28/11 17:45 Prepared: 07/31/11 15:26 Analyzed: 07/31/11 19:08
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G31003 Sequence: AA15998 Calibration: 1107050 Instrument: OVGCMS3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	1.0
108-90-7	Chlorobenzene	1	<1.0	U	0.51	1.0	1.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	1.0
108-38-3/106-4 2-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	2.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	1.0
75-25-2	Bromoform	1	<1.0	U	0.75	1.0	1.0
100-42-5	Styrene	1	<1.0	U	0.49	1.0	1.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	U	0.70	1.0	1.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.53	1.0	1.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.46	1.0	1.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.57	1.0	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<1.0	U	0.96	1.0	1.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	50.0	52	103	85 - 120	
4-Bromofluorobenzene	50.0	56	112	75 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1420618	11.5	1719098	11.51	
1,4-Difluorobenzene	1941246	12.08	2483672	12.09	
Chlorobenzene-d5	1674790	14.78	2147180	14.78	
1,4-Dichlorobenzene-d4	903334	17.17	1109635	17.18	

* Values outside of QC limits

nw 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW16-11C

EPA 8260B

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-04 File ID: 3GZ007.D
 Sampled: 07/29/11 08:20 Prepared: 07/31/11 15:26 Analyzed: 07/31/11 17:37
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G31003 Sequence: AA15998 Calibration: 1107050 Instrument: OVGCM53

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	U	0.74	1.0	1.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	1.0
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	1.0
74-83-9	Bromomethane	1	<1.0	U	0.95	1.0	1.0
75-00-3	Chloroethane	1	<1.0	U	0.98	1.0	1.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.68	1.0	1.0
76-13-1	Freon 113	1	<1.0	U	0.73	1.0	1.0
67-64-1	Acetone	1	<12	U	1.8	12	12
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	1.0
75-15-0	Carbon disulfide	1	<5.0	U	1.9	5.0	5.0
75-09-2	Methylene Chloride	1	<5.0	U	0.69	5.0	5.0
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	U	0.60	1.0	1.0
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.72	1.0	1.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.49	1.0	1.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.57	1.0	1.0
78-93-3	2-Butanone	1	<12	RV	4.5	12	12
67-66-3	Chloroform	1	<1.0	U	0.54	1.0	1.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	U	0.59	1.0	1.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	U	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	U	0.59	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	U	0.65	1.0	1.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.50	1.0	1.0
71-43-2	Benzene	1	<1.0	U	0.58	1.0	1.0
79-01-6	Trichloroethene	1	<1.0	U	0.55	1.0	1.0
78-87-5	1,2-Dichloropropane	1	<1.0	U	0.80	1.0	1.0
75-27-4	Bromodichloromethane	1	<1.0	U	0.49	1.0	1.0
108-10-1	4-Methyl-2-pentanone	1	<12	RV	2.8	12	12
591-78-6	2-Hexanone	1	<2.5	U	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	U	0.59	1.0	1.0
108-88-3	Toluene	1	<1.0	U	0.58	1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	U	0.64	1.0	1.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.63	1.0	1.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	1.0
124-48-1	Dibromochloromethane	1	<1.0	U	0.44	1.0	1.0

ORGANIC ANALYSIS DATA SHEET

MR17-GW16-11C

EPA 8260B

4

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-04 File ID: 3GZ007.D
 Sampled: 07/29/11 08:20 Prepared: 07/31/11 15:26 Analyzed: 07/31/11 17:37
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G31003 Sequence: AA15998 Calibration: 1107050 Instrument: OVGCM3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	1.0
108-90-7	Chlorobenzene	1	<1.0	U	0.51	1.0	1.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	1.0
108-38-3/106-4 2-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	2.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	1.0
75-25-2	Bromoform	1	<1.0	U	0.75	1.0	1.0
100-42-5	Styrene	1	<1.0	U	0.49	1.0	1.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	U	0.70	1.0	1.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.53	1.0	1.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.46	1.0	1.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.57	1.0	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<1.0	U	0.96	1.0	1.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	50.0	44	88	85 - 120	
4-Bromofluorobenzene	50.0	48	96	75 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1492956	11.5	1719098	11.51	
1,4-Difluorobenzene	2036356	12.08	2483672	12.09	
Chlorobenzene-d5	1773383	14.78	2147180	14.78	
1,4-Dichlorobenzene-d4	934494	17.17	1109635	17.18	

* Values outside of QC limits

nw 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW14-11C

EPA 8260B

5

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-05 File ID: 3GZ011.D
 Sampled: 07/29/11 09:35 Prepared: 07/31/11 15:26 Analyzed: 07/31/11 19:39
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G31003 Sequence: AA15998 Calibration: 1107050 Instrument: OVGCM53

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	U	0.74	1.0	1.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	1.0
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	1.0
74-83-9	Bromomethane	1	<1.0	U	0.95	1.0	1.0
75-00-3	Chloroethane	1	<1.0	U	0.98	1.0	1.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.68	1.0	1.0
76-13-1	Freon 113	1	<1.0	U	0.73	1.0	1.0
67-64-1	Acetone	1	<12	U	1.8	12	12
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	1.0
75-15-0	Carbon disulfide	1	<5.0	U	1.9	5.0	5.0
75-09-2	Methylene Chloride	1	<5.0	U	0.69	5.0	5.0
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	U	0.60	1.0	1.0
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.72	1.0	1.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.49	1.0	1.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.57	1.0	1.0
78-93-3	2-Butanone	1	<12	RV	4.5	12	12
67-66-3	Chloroform	1	<1.0	U	0.54	1.0	1.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	U	0.59	1.0	1.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	U	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	U	0.59	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	U	0.65	1.0	1.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.50	1.0	1.0
71-43-2	Benzene	1	<1.0	U	0.58	1.0	1.0
79-01-6	Trichloroethene	1	<1.0	U	0.55	1.0	1.0
78-87-5	1,2-Dichloropropane	1	<1.0	U	0.80	1.0	1.0
75-27-4	Bromodichloromethane	1	<1.0	U	0.49	1.0	1.0
108-10-1	4-Methyl-2-pentanone	1	<12	RV	2.8	12	12
591-78-6	2-Hexanone	1	<2.5	U	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	U	0.59	1.0	1.0
108-88-3	Toluene	1	<1.0	U	0.58	1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	U	0.64	1.0	1.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.63	1.0	1.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	1.0
124-48-1	Dibromochloromethane	1	<1.0	U	0.44	1.0	1.0

ORGANIC ANALYSIS DATA SHEET

MR17-GW14-11C

EPA 8260B

5

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-05 File ID: 3GZ011.D
 Sampled: 07/29/11 09:35 Prepared: 07/31/11 15:26 Analyzed: 07/31/11 19:39
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G31003 Sequence: AA15998 Calibration: 1107050 Instrument: OVGCM3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	1.0
108-90-7	Chlorobenzene	1	<1.0	U	0.51	1.0	1.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	1.0
108-38-3/106-4 2-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	2.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	1.0
75-25-2	Bromoform	1	<1.0	U	0.75	1.0	1.0
100-42-5	Styrene	1	<1.0	U	0.49	1.0	1.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	U	0.70	1.0	1.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.53	1.0	1.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.46	1.0	1.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.57	1.0	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<1.0	U	0.96	1.0	1.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	50.0	52	104	85 - 120	
4-Bromofluorobenzene	50.0	57	115	75 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1423005	11.5	1719098	11.51	
1,4-Difluorobenzene	1916740	12.08	2483672	12.09	
Chlorobenzene-d5	1700505	14.77	2147180	14.78	
1,4-Dichlorobenzene-d4	921446	17.18	1109635	17.18	

* Values outside of QC limits

NW 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW15-11C

EPA 8260B

6

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-06 File ID: 3GZ012.D
 Sampled: 07/29/11 09:40 Prepared: 07/31/11 15:26 Analyzed: 07/31/11 20:09
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G31003 Sequence: AA15998 Calibration: 1107050 Instrument: OVGCM53

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	U	0.74	1.0	1.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	1.0
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	1.0
74-83-9	Bromomethane	1	<1.0	U	0.95	1.0	1.0
75-00-3	Chloroethane	1	<1.0	U	0.98	1.0	1.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.68	1.0	1.0
76-13-1	Freon 113	1	<1.0	U	0.73	1.0	1.0
67-64-1	Acetone	1	<12	U	1.8	12	12
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	1.0
75-15-0	Carbon disulfide	1	<5.0	U	1.9	5.0	5.0
75-09-2	Methylene Chloride	1	<5.0	U	0.69	5.0	5.0
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	U	0.60	1.0	1.0
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.72	1.0	1.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.49	1.0	1.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.57	1.0	1.0
78-93-3	2-Butanone	1	<12	RV	4.5	12	12
67-66-3	Chloroform	1	<1.0	U	0.54	1.0	1.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	U	0.59	1.0	1.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	U	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	U	0.59	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	U	0.65	1.0	1.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.50	1.0	1.0
71-43-2	Benzene	1	<1.0	U	0.58	1.0	1.0
79-01-6	Trichloroethene	1	<1.0	U	0.55	1.0	1.0
78-87-5	1,2-Dichloropropane	1	<1.0	U	0.80	1.0	1.0
75-27-4	Bromodichloromethane	1	<1.0	U	0.49	1.0	1.0
108-10-1	4-Methyl-2-pentanone	1	<12	RV	2.8	12	12
591-78-6	2-Hexanone	1	<2.5	U	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	U	0.59	1.0	1.0
108-88-3	Toluene	1	<1.0	U	0.58	1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	U	0.64	1.0	1.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.63	1.0	1.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	1.0
124-48-1	Dibromochloromethane	1	<1.0	U	0.44	1.0	1.0

ORGANIC ANALYSIS DATA SHEET

MR17-GW15-11C

EPA 8260B

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-06 File ID: 3GZ012.D
 Sampled: 07/29/11 09:40 Prepared: 07/31/11 15:26 Analyzed: 07/31/11 20:09
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G31003 Sequence: AA15998 Calibration: 1107050 Instrument: OVGCMS3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	1.0
108-90-7	Chlorobenzene	1	<1.0	U	0.51	1.0	1.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	1.0
108-38-3/106-4 2-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	2.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	1.0
75-25-2	Bromoform	1	<1.0	U	0.75	1.0	1.0
100-42-5	Styrene	1	<1.0	U	0.49	1.0	1.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	U	0.70	1.0	1.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.53	1.0	1.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.46	1.0	1.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.57	1.0	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<1.0	U	0.96	1.0	1.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	50.0	53	105	85 - 120	
4-Bromofluorobenzene	50.0	59	118	75 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1340967	11.5	1719098	11.51	
1,4-Difluorobenzene	1851330	12.08	2483672	12.09	
Chlorobenzene-d5	1651384	14.77	2147180	14.78	
1,4-Dichlorobenzene-d4	864695	17.17	1109635	17.18	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

MR17-GW09-11C

EPA 8260B

7

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-07 File ID: 3GZ013.D
 Sampled: 07/28/11 17:40 Prepared: 07/31/11 15:26 Analyzed: 07/31/11 20:39
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G31003 Sequence: AA15998 Calibration: 1107050 Instrument: OVGCM53

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	U	0.74	1.0	1.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	1.0
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	1.0
74-83-9	Bromomethane	1	<1.0	U	0.95	1.0	1.0
75-00-3	Chloroethane	1	<1.0	U	0.98	1.0	1.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.68	1.0	1.0
76-13-1	Freon 113	1	<1.0	U	0.73	1.0	1.0
67-64-1	Acetone	1	<12	U	1.8	12	12
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	1.0
75-15-0	Carbon disulfide	1	2.0	J	1.9	5.0	5.0
75-09-2	Methylene Chloride	1	<5.0	U	0.69	5.0	5.0
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	U	0.60	1.0	1.0
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.72	1.0	1.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.49	1.0	1.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.57	1.0	1.0
78-93-3	2-Butanone <i>ICU</i>	1	<12	<i>RU</i>	4.5	12	12
67-66-3	Chloroform	1	<1.0	U	0.54	1.0	1.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	U	0.59	1.0	1.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	U	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	U	0.59	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	U	0.65	1.0	1.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.50	1.0	1.0
71-43-2	Benzene	1	<1.0	U	0.58	1.0	1.0
79-01-6	Trichloroethene	1	<1.0	U	0.55	1.0	1.0
78-87-5	1,2-Dichloropropane	1	<1.0	U	0.80	1.0	1.0
75-27-4	Bromodichloromethane	1	<1.0	U	0.49	1.0	1.0
108-10-1	4-Methyl-2-pentanone <i>ICU</i>	1	<12	<i>RU</i>	2.8	12	12
591-78-6	2-Hexanone	1	<2.5	U	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	U	0.59	1.0	1.0
108-88-3	Toluene	1	2.0		0.58	1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	U	0.64	1.0	1.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.63	1.0	1.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	1.0
124-48-1	Dibromochloromethane	1	<1.0	U	0.44	1.0	1.0

NW 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW09-11C

EPA 8260B

7

Laboratory: ENCO Orlando SDG: CH025-021

Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41

Matrix: Ground Water Laboratory ID: A104132-07 File ID: 3GZ013.D

Sampled: 07/28/11 17:40 Prepared: 07/31/11 15:26 Analyzed: 07/31/11 20:39

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1G31003 Sequence: AA15998 Calibration: 1107050 Instrument: OVGCMS3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	1.0
108-90-7	Chlorobenzene	1	<1.0	U	0.51	1.0	1.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	1.0
108-38-3/106-4 2-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	2.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	1.0
75-25-2	Bromoform	1	<1.0	U	0.75	1.0	1.0
100-42-5	Styrene	1	<1.0	U	0.49	1.0	1.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	U	0.70	1.0	1.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.53	1.0	1.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.46	1.0	1.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.57	1.0	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<1.0	U	0.96	1.0	1.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	50.0	52	104	85 - 120	
4-Bromofluorobenzene	50.0	57	113	75 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1338495	11.5	1719098	11.51	
1,4-Difluorobenzene	1801038	12.08	2483672	12.09	
Chlorobenzene-d5	1607436	14.77	2147180	14.78	
1,4-Dichlorobenzene-d4	838324	17.18	1109635	17.18	

* Values outside of QC limits

NW 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-TB072911

EPA 8260B

8

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Water Laboratory ID: A104132-08 File ID: 3GZ014.D
 Sampled: 07/29/11 00:00 Prepared: 07/31/11 15:26 Analyzed: 07/31/11 21:10
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G31003 Sequence: AA15998 Calibration: 1107050 Instrument: OVGCM53

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	U	0.74	1.0	1.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	1.0
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	1.0
74-83-9	Bromomethane	1	<1.0	U	0.95	1.0	1.0
75-00-3	Chloroethane	1	<1.0	U	0.98	1.0	1.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.68	1.0	1.0
76-13-1	Freon 113	1	<1.0	U	0.73	1.0	1.0
67-64-1	Acetone	1	<12	U	1.8	12	12
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	1.0
75-15-0	Carbon disulfide	1	<5.0	U	1.9	5.0	5.0
75-09-2	Methylene Chloride	1	<5.0	U	0.69	5.0	5.0
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	U	0.60	1.0	1.0
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.72	1.0	1.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.49	1.0	1.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.57	1.0	1.0
78-93-3	2-Butanone	1	<12	RU	4.5	12	12
67-66-3	Chloroform	1	<1.0	U	0.54	1.0	1.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	U	0.59	1.0	1.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	U	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	U	0.59	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	U	0.65	1.0	1.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.50	1.0	1.0
71-43-2	Benzene	1	<1.0	U	0.58	1.0	1.0
79-01-6	Trichloroethene	1	<1.0	U	0.55	1.0	1.0
78-87-5	1,2-Dichloropropane	1	<1.0	U	0.80	1.0	1.0
75-27-4	Bromodichloromethane	1	<1.0	U	0.49	1.0	1.0
108-10-1	4-Methyl-2-pentanone	1	<12	RU	2.8	12	12
591-78-6	2-Hexanone	1	<2.5	U	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	U	0.59	1.0	1.0
108-88-3	Toluene	1	<1.0	U	0.58	1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	U	0.64	1.0	1.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.63	1.0	1.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	1.0
124-48-1	Dibromochloromethane	1	<1.0	U	0.44	1.0	1.0

ORGANIC ANALYSIS DATA SHEET

MR17-TB072911

EPA 8260B

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Water Laboratory ID: A104132-08 File ID: 3GZ014.D
 Sampled: 07/29/11 00:00 Prepared: 07/31/11 15:26 Analyzed: 07/31/11 21:10
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G31003 Sequence: AA15998 Calibration: 1107050 Instrument: OVGCM3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	1.0
108-90-7	Chlorobenzene	1	<1.0	U	0.51	1.0	1.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	1.0
108-38-3/106-4 2-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	2.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	1.0
75-25-2	Bromoform	1	<1.0	U	0.75	1.0	1.0
100-42-5	Styrene	1	<1.0	U	0.49	1.0	1.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	U	0.70	1.0	1.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.53	1.0	1.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.46	1.0	1.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.57	1.0	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<1.0	U	0.96	1.0	1.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	50.0	51	103	85 - 120	
4-Bromofluorobenzene	50.0	56	111	75 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1346422	11.5	1719098	11.51	
1,4-Difluorobenzene	1862795	12.08	2483672	12.09	
Chlorobenzene-d5	1652588	14.78	2147180	14.78	
1,4-Dichlorobenzene-d4	880036	17.17	1109635	17.18	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

MR17-GW11-11C

EPA 8260B

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-09 File ID: 3GZ015.D
 Sampled: 07/28/11 17:20 Prepared: 07/31/11 15:26 Analyzed: 07/31/11 21:40
 Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL
 Batch: 1G31003 Sequence: AA15998 Calibration: 1107050 Instrument: OVGCMS3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	U	0.74	1.0	1.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	1.0
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	1.0
74-83-9	Bromomethane	1	<1.0	U	0.95	1.0	1.0
75-00-3	Chloroethane	1	<1.0	U	0.98	1.0	1.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.68	1.0	1.0
76-13-1	Freon 113	1	<1.0	U	0.73	1.0	1.0
67-64-1	Acetone	1	<12	U	1.8	12	12
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	1.0
75-15-0	Carbon disulfide	1	<5.0	U	1.9	5.0	5.0
75-09-2	Methylene Chloride	1	<5.0	U	0.69	5.0	5.0
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	U	0.60	1.0	1.0
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.72	1.0	1.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.49	1.0	1.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.57	1.0	1.0
78-93-3	2-Butanone	1	<12	RV	4.5	12	12
67-66-3	Chloroform	1	<1.0	U	0.54	1.0	1.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	U	0.59	1.0	1.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	U	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	U	0.59	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	U	0.65	1.0	1.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.50	1.0	1.0
71-43-2	Benzene	1	<1.0	U	0.58	1.0	1.0
79-01-6	Trichloroethene	1	<1.0	U	0.55	1.0	1.0
78-87-5	1,2-Dichloropropane	1	<1.0	U	0.80	1.0	1.0
75-27-4	Bromodichloromethane	1	<1.0	U	0.49	1.0	1.0
108-10-1	4-Methyl-2-pentanone	1	<12	RV	2.8	12	12
591-78-6	2-Hexanone	1	<2.5	U	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	U	0.59	1.0	1.0
108-88-3	Toluene	1	<1.0	U	0.58	1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	U	0.64	1.0	1.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.63	1.0	1.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	1.0
124-48-1	Dibromochloromethane	1	<1.0	U	0.44	1.0	1.0

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

MR17-GW11-11C

9

Laboratory:	ENCO Orlando	SDG:	CH025-021
Client:	CH2M Hill, Inc. (CH025)	Project:	MCB CamLej Site UXO-17 CTO-WE41
Matrix:	Ground Water	Laboratory ID:	A104132-09
		File ID:	3GZ015.D
Sampled:	07/28/11 17:20	Prepared:	07/31/11 15:26
		Analyzed:	07/31/11 21:40
Solids:		Preparation:	EPA 5030B_MS
		Initial/Final:	5 mL / 5 mL
Batch:	1G31003	Sequence:	AA15998
		Calibration:	1107050
		Instrument:	OVGCMS3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	1.0
108-90-7	Chlorobenzene	1	<1.0	U	0.51	1.0	1.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	1.0
108-38-3/106-4 2-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	2.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	1.0
75-25-2	Bromoform	1	<1.0	U	0.75	1.0	1.0
100-42-5	Styrene	1	<1.0	U	0.49	1.0	1.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	U	0.70	1.0	1.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.53	1.0	1.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.46	1.0	1.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.57	1.0	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<1.0	U	0.96	1.0	1.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	50.0	52	105	85 - 120	
4-Bromofluorobenzene	50.0	55	110	75 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1332896	11.51	1719098	11.51	
1,4-Difluorobenzene	1848802	12.08	2483672	12.09	
Chlorobenzene-d5	1677157	14.78	2147180	14.78	
1,4-Dichlorobenzene-d4	848438	17.18	1109635	17.18	

* Values outside of QC limits

MW 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-EB072911

EPA 8270D

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-01 File ID: 1h3012.D
 Sampled: 07/29/11 10:00 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 18:15
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<5.0	U	2.6	5.0	10
108-95-2	Phenol	1	<6.0	U	1.7	6.0	10
111-44-4	Bis(2-chloroethyl)ether	1	<6.0	U	2.4	6.0	10
95-57-8	2-Chlorophenol	1	<6.0	U	3.6	6.0	10
95-48-7	2-Methylphenol	1	<6.0	U	1.6	6.0	10
39638-32-9	Bis(2-chloroisopropyl)ether	1	<6.0	U	2.4	6.0	10
98-86-2	Acetophenone	1	<6.0	U	4.8	6.0	10
108-39-4/106-4 4-5	3 & 4-Methylphenol	1	<6.0	U	3.5	6.0	10
621-64-7	N-Nitroso-di-n-propylamine	1	<6.0	U	2.6	6.0	10
67-72-1	Hexachloroethane	1	<6.0	U	1.6	6.0	10
98-95-3	Nitrobenzene	1	<6.0	U	2.6	6.0	10
78-59-1	Isophorone	1	<6.0	U	2.7	6.0	10
88-75-5	2-Nitrophenol	1	<6.0	U	4.2	6.0	10
105-67-9	2,4-Dimethylphenol	1	<6.0	U	3.0	6.0	10
111-91-1	Bis(2-chloroethoxy)methane	1	<6.0	U	2.4	6.0	10
120-83-2	2,4-Dichlorophenol	1	<6.0	U	4.0	6.0	10
91-20-3	Naphthalene	1	<6.0	U	2.1	6.0	10
106-47-8	4-Chloroaniline	1	<6.0	U	2.4	6.0	10
87-68-3	Hexachlorobutadiene	1	<3.0	U	1.4	3.0	10
105-60-2	Caprolactam	1	<4.0	U	0.92	4.0	10
59-50-7	4-Chloro-3-methylphenol	1	<6.0	U	3.1	6.0	10
91-57-6	2-Methylnaphthalene	1	<3.0	U	2.1	3.0	10
77-47-4	Hexachlorocyclopentadiene	1	<3.0	U	1.1	3.0	10
88-06-2	2,4,6-Trichlorophenol	1	<6.0	U	3.3	6.0	10
95-95-4	2,4,5-Trichlorophenol	1	<3.0	U	1.5	3.0	10
92-52-4	1,1'-Biphenyl	1	<5.0	U	2.5	5.0	10
91-58-7	2-Chloronaphthalene	1	<3.0	U	1.9	3.0	10
88-74-4	2-Nitroaniline	1	<6.0	U	2.5	6.0	10
131-11-3	Dimethylphthalate	1	<3.0	U	2.0	3.0	10
606-20-2	2,6-Dinitrotoluene	1	<3.0	U	2.4	3.0	10
208-96-8	Acenaphthylene	1	<3.0	U	2.3	3.0	10
99-09-2	3-Nitroaniline	1	<3.0	U	2.1	3.0	10
83-32-9	Acenaphthene	1	<3.0	U	2.1	3.0	10
51-28-5	2,4-Dinitrophenol	1	<6.0	U	3.3	6.0	10

NW 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-EB072911

EPA 8270D

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-01 File ID: 1h3012.D
 Sampled: 07/29/11 10:00 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 18:15
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-02-7	4-Nitrophenol	1	<3.0	U	1.8	3.0	10
132-64-9	Dibenzofuran	1	<3.0	U	2.3	3.0	10
121-14-2	2,4-Dinitrotoluene	1	<3.0	U	2.1	3.0	10
84-66-2	Diethylphthalate	1	<3.0	U	2.1	3.0	10
7005-72-3	4-Chlorophenyl-phenylether	1	<3.0	U	1.9	3.0	10
86-73-7	Fluorene	1	<3.0	U	2.1	3.0	10
100-01-6	4-Nitroaniline	1	<3.0	U	2.2	3.0	10
534-52-1	2-Methyl-4,6-dinitrophenol	1	<6.0	U	4.3	6.0	10
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<6.0	U	3.8	6.0	10
101-55-3	4-Bromophenyl-phenylether	1	<3.0	U	1.4	3.0	10
118-74-1	Hexachlorobenzene	1	<3.0	U	1.2	3.0	10
1912-24-9	Atrazine	1	<5.0	U	2.6	5.0	10
87-86-5	Pentachlorophenol	1	<6.0	U	3.5	6.0	10
85-01-8	Phenanthrene	1	<3.0	U	1.5	3.0	10
120-12-7	Anthracene	1	<3.0	U	1.8	3.0	10
86-74-8	Carbazole	1	<3.0	U	1.9	3.0	10
84-74-2	Di-n-butylphthalate	1	<3.0	U	2.5	3.0	10
206-44-0	Fluoranthene	1	<3.0	U	2.5	3.0	10
129-00-0	Pyrene	1	<3.0	U	2.6	3.0	10
85-68-7	Butylbenzylphthalate	1	<6.0	U	3.4	6.0	10
91-94-1	3,3'-Dichlorobenzidine	1	<3.0	U	2.3	3.0	10
56-55-3	Benzo(a)anthracene	1	<3.0	U	2.3	3.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	1	<3.0	U	2.7	3.0	5.0
218-01-9	Chrysene	1	<3.0	U	2.5	3.0	10
117-84-0	Di-n-octylphthalate	1	<3.0	U	2.3	3.0	10
205-99-2	Benzo(b)fluoranthene	1	<3.0	U	2.0	3.0	10
207-08-9	Benzo(k)fluoranthene	1	<3.0	U	2.2	3.0	10
50-32-8	Benzo(a)pyrene	1	<3.0	U	2.2	3.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	1	<3.0	U	2.2	3.0	10
53-70-3	Dibenzo(a,h)anthracene	1	<3.0	U	1.9	3.0	10
191-24-2	Benzo(g,h,i)perylene	1	<3.0	U	2.2	3.0	10

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Phenol-d5	50.0	9.8	20	10 - 115	
Nitrobenzene-d5	50.0	22	44	40 - 110	

NW 8/19/11

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

MR17-EB072911

Laboratory: ENCO Orlando SDG: CH025-021
Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
Matrix: Ground Water Laboratory ID: A104132-01 File ID: 1h3012.D
Sampled: 07/29/11 10:00 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 18:15
Solids: Preparation: EPA 3510C MS Initial/Final: 500 mL / 0.5 mL
Batch: IH01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	50.0	24	48	50 - 110	*
2,4,6-Tribromophenol	50.0	29	57	40 - 125	
Terphenyl-d14	50.0	32	65	50 - 135	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	262537	7.026	293866	7.026	
Naphthalene-d8	956088	8.602	997259	8.611	
Acenaphthene-d10	585122	10.809	634054	10.818	
Phenanthrene-d10	1011146	12.685	930851	12.696	
Chrysene-d12	791104	16.331	638137	16.341	
Perylene-d12	554792	19.195	443447	19.195	

* Values outside of QC limits

nw 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW13-11C

EPA 8270D

2

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-02 File ID: 1h3013.D
 Sampled: 07/29/11 08:15 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 18:44
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<5.0	U	2.6	5.0	10
108-95-2	Phenol	1	<6.0	U	1.7	6.0	10
111-44-4	Bis(2-chloroethyl)ether	1	<6.0	U	2.4	6.0	10
95-57-8	2-Chlorophenol	1	<6.0	U	3.6	6.0	10
95-48-7	2-Methylphenol	1	<6.0	U	1.6	6.0	10
39638-32-9	Bis(2-chloroisopropyl)ether	1	<6.0	U	2.4	6.0	10
98-86-2	Acetophenone	1	<6.0	U	4.8	6.0	10
108-39-4/106-44-5	3 & 4-Methylphenol	1	<6.0	U	3.5	6.0	10
621-64-7	N-Nitroso-di-n-propylamine	1	<6.0	U	2.6	6.0	10
67-72-1	Hexachloroethane	1	<6.0	U	1.6	6.0	10
98-95-3	Nitrobenzene	1	<6.0	U	2.6	6.0	10
78-59-1	Isophorone	1	<6.0	U	2.7	6.0	10
88-75-5	2-Nitrophenol	1	<6.0	U	4.2	6.0	10
105-67-9	2,4-Dimethylphenol	1	<6.0	U	3.0	6.0	10
111-91-1	Bis(2-chloroethoxy)methane	1	<6.0	U	2.4	6.0	10
120-83-2	2,4-Dichlorophenol	1	<6.0	U	4.0	6.0	10
91-20-3	Naphthalene	1	<6.0	U	2.1	6.0	10
106-47-8	4-Chloroaniline	1	<6.0	U	2.4	6.0	10
87-68-3	Hexachlorobutadiene	1	<3.0	U	1.4	3.0	10
105-60-2	Caprolactam	1	<4.0	U	0.92	4.0	10
59-50-7	4-Chloro-3-methylphenol	1	<6.0	U	3.1	6.0	10
91-57-6	2-Methylnaphthalene	1	<3.0	U	2.1	3.0	10
77-47-4	Hexachlorocyclopentadiene	1	<3.0	U	1.1	3.0	10
88-06-2	2,4,6-Trichlorophenol	1	<6.0	U	3.3	6.0	10
95-95-4	2,4,5-Trichlorophenol	1	<3.0	U	1.5	3.0	10
92-52-4	1,1'-Biphenyl	1	<5.0	U	2.5	5.0	10
91-58-7	2-Chloronaphthalene	1	<3.0	U	1.9	3.0	10
88-74-4	2-Nitroaniline	1	<6.0	U	2.5	6.0	10
131-11-3	Dimethylphthalate	1	<3.0	U	2.0	3.0	10
606-20-2	2,6-Dinitrotoluene	1	<3.0	U	2.4	3.0	10
208-96-8	Acenaphthylene	1	<3.0	U	2.3	3.0	10
99-09-2	3-Nitroaniline	1	<3.0	U	2.1	3.0	10
83-32-9	Acenaphthene	1	<3.0	U	2.1	3.0	10
51-28-5	2,4-Dinitrophenol	1	<6.0	U	3.3	6.0	10

New 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW13-11C

EPA 8270D

2

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-02 File ID: 1h3013.D
 Sampled: 07/29/11 08:15 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 18:44
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-02-7	4-Nitrophenol	1	<3.0	U	1.8	3.0	10
132-64-9	Dibenzofuran	1	<3.0	U	2.3	3.0	10
121-14-2	2,4-Dinitrotoluene	1	<3.0	U	2.1	3.0	10
84-66-2	Diethylphthalate	1	<3.0	U	2.1	3.0	10
7005-72-3	4-Chlorophenyl-phenylether	1	<3.0	U	1.9	3.0	10
86-73-7	Fluorene	1	<3.0	U	2.1	3.0	10
100-01-6	4-Nitroaniline	1	<3.0	U	2.2	3.0	10
534-52-1	2-Methyl-4,6-dinitrophenol	1	<6.0	U	4.3	6.0	10
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<6.0	U	3.8	6.0	10
101-55-3	4-Bromophenyl-phenylether	1	<3.0	U	1.4	3.0	10
118-74-1	Hexachlorobenzene	1	<3.0	U	1.2	3.0	10
1912-24-9	Atrazine	1	<5.0	U	2.6	5.0	10
87-86-5	Pentachlorophenol	1	<6.0	U	3.5	6.0	10
85-01-8	Phenanthrene	1	<3.0	U	1.5	3.0	10
120-12-7	Anthracene	1	<3.0	U	1.8	3.0	10
86-74-8	Carbazole	1	<3.0	U	1.9	3.0	10
84-74-2	Di-n-butylphthalate	1	<3.0	U	2.5	3.0	10
206-44-0	Fluoranthene	1	<3.0	U	2.5	3.0	10
129-00-0	Pyrene	1	<3.0	U	2.6	3.0	10
85-68-7	Butylbenzylphthalate	1	<6.0	U	3.4	6.0	10
91-94-1	3,3'-Dichlorobenzidine	1	<3.0	U	2.3	3.0	10
56-55-3	Benzo(a)anthracene	1	<3.0	U	2.3	3.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	1	<3.0	U	2.7	3.0	5.0
218-01-9	Chrysene	1	<3.0	U	2.5	3.0	10
117-84-0	Di-n-octylphthalate	1	<3.0	U	2.3	3.0	10
205-99-2	Benzo(b)fluoranthene	1	<3.0	U	2.0	3.0	10
207-08-9	Benzo(k)fluoranthene	1	<3.0	U	2.2	3.0	10
50-32-8	Benzo(a)pyrene	1	<3.0	U	2.2	3.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	1	<3.0	U	2.2	3.0	10
53-70-3	Dibenzo(a,h)anthracene	1	<3.0	U	1.9	3.0	10
191-24-2	Benzo(g,h,i)perylene	1	<3.0	U	2.2	3.0	10

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Phenol-d5	50.0	12	23	10 - 115	
Nitrobenzene-d5	50.0	28	56	40 - 110	

NW 8/19/11

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

MR17-GW13-11C

2

Laboratory: ENCO Orlando SDG: CH025-021
Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
Matrix: Ground Water Laboratory ID: A104132-02 File ID: 1h3013.D
Sampled: 07/29/11 08:15 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 18:44
Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	50.0	31	61	50 - 110	
2,4,6-Tribromophenol	50.0	35	69	40 - 125	
Terphenyl-d14	50.0	37	73	50 - 135	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	231132	7.016	293866	7.026	
Naphthalene-d8	823320	8.602	997259	8.611	
Acenaphthene-d10	494274	10.809	634054	10.818	
Phenanthrene-d10	873279	12.685	930851	12.696	
Chrysene-d12	644234	16.322	638137	16.341	
Perylene-d12	449815	19.186	443447	19.195	

* Values outside of QC limits

nw 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-EB072811

EPA 8270D

3

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-03 File ID: 1h3014.D
 Sampled: 07/28/11 17:45 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 19:13
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<5.0	U	2.6	5.0	10
108-95-2	Phenol	1	<6.0	U	1.7	6.0	10
111-44-4	Bis(2-chloroethyl)ether	1	<6.0	U	2.4	6.0	10
95-57-8	2-Chlorophenol	1	<6.0	U	3.6	6.0	10
95-48-7	2-Methylphenol	1	<6.0	U	1.6	6.0	10
39638-32-9	Bis(2-chloroisopropyl)ether	1	<6.0	U	2.4	6.0	10
98-86-2	Acetophenone	1	<6.0	U	4.8	6.0	10
108-39-4/106-4 4-5	3 & 4-Methylphenol	1	<6.0	U	3.5	6.0	10
621-64-7	N-Nitroso-di-n-propylamine	1	<6.0	U	2.6	6.0	10
67-72-1	Hexachloroethane	1	<6.0	U	1.6	6.0	10
98-95-3	Nitrobenzene	1	<6.0	U	2.6	6.0	10
78-59-1	Isophorone	1	<6.0	U	2.7	6.0	10
88-75-5	2-Nitrophenol	1	<6.0	U	4.2	6.0	10
105-67-9	2,4-Dimethylphenol	1	<6.0	U	3.0	6.0	10
111-91-1	Bis(2-chloroethoxy)methane	1	<6.0	U	2.4	6.0	10
120-83-2	2,4-Dichlorophenol	1	<6.0	U	4.0	6.0	10
91-20-3	Naphthalene	1	<6.0	U	2.1	6.0	10
106-47-8	4-Chloroaniline	1	<6.0	U	2.4	6.0	10
87-68-3	Hexachlorobutadiene	1	<3.0	U	1.4	3.0	10
105-60-2	Caprolactam	1	<4.0	U	0.92	4.0	10
59-50-7	4-Chloro-3-methylphenol	1	<6.0	U	3.1	6.0	10
91-57-6	2-Methylnaphthalene	1	<3.0	U	2.1	3.0	10
77-47-4	Hexachlorocyclopentadiene	1	<3.0	U	1.1	3.0	10
88-06-2	2,4,6-Trichlorophenol	1	<6.0	U	3.3	6.0	10
95-95-4	2,4,5-Trichlorophenol	1	<3.0	U	1.5	3.0	10
92-52-4	1,1'-Biphenyl	1	<5.0	U	2.5	5.0	10
91-58-7	2-Chloronaphthalene	1	<3.0	U	1.9	3.0	10
88-74-4	2-Nitroaniline	1	<6.0	U	2.5	6.0	10
131-11-3	Dimethylphthalate	1	<3.0	U	2.0	3.0	10
606-20-2	2,6-Dinitrotoluene	1	<3.0	U	2.4	3.0	10
208-96-8	Acenaphthylene	1	<3.0	U	2.3	3.0	10
99-09-2	3-Nitroaniline	1	<3.0	U	2.1	3.0	10
83-32-9	Acenaphthene	1	<3.0	U	2.1	3.0	10
51-28-5	2,4-Dinitrophenol	1	<6.0	U	3.3	6.0	10

NW 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-EB072811

EPA 8270D

3

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-03 File ID: 1h3014.D
 Sampled: 07/28/11 17:45 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 19:13
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-02-7	4-Nitrophenol	1	<3.0	U	1.8	3.0	10
132-64-9	Dibenzofuran	1	<3.0	U	2.3	3.0	10
121-14-2	2,4-Dinitrotoluene	1	<3.0	U	2.1	3.0	10
84-66-2	Diethylphthalate	1	<3.0	U	2.1	3.0	10
7005-72-3	4-Chlorophenyl-phenylether	1	<3.0	U	1.9	3.0	10
86-73-7	Fluorene	1	<3.0	U	2.1	3.0	10
100-01-6	4-Nitroaniline	1	<3.0	U	2.2	3.0	10
534-52-1	2-Methyl-4,6-dinitrophenol	1	<6.0	U	4.3	6.0	10
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<6.0	U	3.8	6.0	10
101-55-3	4-Bromophenyl-phenylether	1	<3.0	U	1.4	3.0	10
118-74-1	Hexachlorobenzene	1	<3.0	U	1.2	3.0	10
1912-24-9	Atrazine	1	<5.0	U	2.6	5.0	10
87-86-5	Pentachlorophenol	1	<6.0	U	3.5	6.0	10
85-01-8	Phenanthrene	1	<3.0	U	1.5	3.0	10
120-12-7	Anthracene	1	<3.0	U	1.8	3.0	10
86-74-8	Carbazole	1	<3.0	U	1.9	3.0	10
84-74-2	Di-n-butylphthalate	1	<3.0	U	2.5	3.0	10
206-44-0	Fluoranthene	1	<3.0	U	2.5	3.0	10
129-00-0	Pyrene	1	<3.0	U	2.6	3.0	10
85-68-7	Butylbenzylphthalate	1	<6.0	U	3.4	6.0	10
91-94-1	3,3'-Dichlorobenzidine	1	<3.0	U	2.3	3.0	10
56-55-3	Benzo(a)anthracene	1	<3.0	U	2.3	3.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	1	<3.0	U	2.7	3.0	5.0
218-01-9	Chrysene	1	<3.0	U	2.5	3.0	10
117-84-0	Di-n-octylphthalate	1	<3.0	U	2.3	3.0	10
205-99-2	Benzo(b)fluoranthene	1	<3.0	U	2.0	3.0	10
207-08-9	Benzo(k)fluoranthene	1	<3.0	U	2.2	3.0	10
50-32-8	Benzo(a)pyrene	1	<3.0	U	2.2	3.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	1	<3.0	U	2.2	3.0	10
53-70-3	Dibenzo(a,h)anthracene	1	<3.0	U	1.9	3.0	10
191-24-2	Benzo(g,h,i)perylene	1	<3.0	U	2.2	3.0	10

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Phenol-d5	50.0	15	31	10 - 115	
Nitrobenzene-d5	50.0	37	74	40 - 110	

MW 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-EB072811

EPA 8270D

3

Laboratory: ENCO Orlando SDG: CH025-021
Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
Matrix: Ground Water Laboratory ID: A104132-03 File ID: 1h3014.D
Sampled: 07/28/11 17:45 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 19:13
Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	50.0	41	82	50 - 110	
2,4,6-Tribromophenol	50.0	35	69	40 - 125	
Terphenyl-d14	50.0	44	87	50 - 135	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	282244	7.026	293866	7.026	
Naphthalene-d8	1001222	8.602	997259	8.611	
Acenaphthene-d10	593422	10.809	634054	10.818	
Phenanthrene-d10	1014604	12.685	930851	12.696	
Chrysene-d12	796510	16.322	638137	16.341	
Perylene-d12	618196	19.195	443447	19.195	

* Values outside of QC limits

nw 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW16-11C

EPA 8270D

4

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-04 File ID: 1h3011.D
 Sampled: 07/29/11 08:20 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 17:46
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<5.0	U	2.6	5.0	10
108-95-2	Phenol	1	<6.0	U	1.7	6.0	10
111-44-4	Bis(2-chloroethyl)ether	1	<6.0	U	2.4	6.0	10
95-57-8	2-Chlorophenol	1	<6.0	U	3.6	6.0	10
95-48-7	2-Methylphenol	1	<6.0	U	1.6	6.0	10
39638-32-9	Bis(2-chloroisopropyl)ether	1	<6.0	U	2.4	6.0	10
98-86-2	Acetophenone	1	<6.0	U	4.8	6.0	10
108-39-4/106-4 4-5	3 & 4-Methylphenol	1	<6.0	U	3.5	6.0	10
621-64-7	N-Nitroso-di-n-propylamine	1	<6.0	U	2.6	6.0	10
67-72-1	Hexachloroethane	1	<6.0	U	1.6	6.0	10
98-95-3	Nitrobenzene	1	<6.0	U	2.6	6.0	10
78-59-1	Isophorone	1	<6.0	U	2.7	6.0	10
88-75-5	2-Nitrophenol	1	<6.0	U	4.2	6.0	10
105-67-9	2,4-Dimethylphenol	1	<6.0	U	3.0	6.0	10
111-91-1	Bis(2-chloroethoxy)methane	1	<6.0	U	2.4	6.0	10
120-83-2	2,4-Dichlorophenol	1	<6.0	U	4.0	6.0	10
91-20-3	Naphthalene	1	<6.0	U	2.1	6.0	10
106-47-8	4-Chloroaniline	1	<6.0	U	2.4	6.0	10
87-68-3	Hexachlorobutadiene	1	<3.0	U	1.4	3.0	10
105-60-2	Caprolactam	1	<4.0	U	0.92	4.0	10
59-50-7	4-Chloro-3-methylphenol	1	<6.0	U	3.1	6.0	10
91-57-6	2-Methylnaphthalene	1	<3.0	U	2.1	3.0	10
77-47-4	Hexachlorocyclopentadiene	1	<3.0	U	1.1	3.0	10
88-06-2	2,4,6-Trichlorophenol	1	<6.0	U	3.3	6.0	10
95-95-4	2,4,5-Trichlorophenol	1	<3.0	U	1.5	3.0	10
92-52-4	1,1'-Biphenyl	1	<5.0	U	2.5	5.0	10
91-58-7	2-Chloronaphthalene	1	<3.0	U	1.9	3.0	10
88-74-4	2-Nitroaniline	1	<6.0	U	2.5	6.0	10
131-11-3	Dimethylphthalate	1	<3.0	U	2.0	3.0	10
606-20-2	2,6-Dinitrotoluene	1	<3.0	U	2.4	3.0	10
208-96-8	Acenaphthylene	1	<3.0	U	2.3	3.0	10
99-09-2	3-Nitroaniline	1	<3.0	U	2.1	3.0	10
83-32-9	Acenaphthene	1	<3.0	U	2.1	3.0	10
51-28-5	2,4-Dinitrophenol	1	<6.0	U	3.3	6.0	10

lw 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW16-11C

EPA 8270D

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-04 File ID: 1h3011.D
 Sampled: 07/29/11 08:20 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 17:46
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-02-7	4-Nitrophenol	1	<3.0	U	1.8	3.0	10
132-64-9	Dibenzofuran	1	<3.0	U	2.3	3.0	10
121-14-2	2,4-Dinitrotoluene	1	<3.0	U	2.1	3.0	10
84-66-2	Diethylphthalate	1	<3.0	U	2.1	3.0	10
7005-72-3	4-Chlorophenyl-phenylether	1	<3.0	U	1.9	3.0	10
86-73-7	Fluorene	1	<3.0	U	2.1	3.0	10
100-01-6	4-Nitroaniline	1	<3.0	U	2.2	3.0	10
534-52-1	2-Methyl-4,6-dinitrophenol	1	<6.0	U	4.3	6.0	10
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<6.0	U	3.8	6.0	10
101-55-3	4-Bromophenyl-phenylether	1	<3.0	U	1.4	3.0	10
118-74-1	Hexachlorobenzene	1	<3.0	U	1.2	3.0	10
1912-24-9	Atrazine	1	<5.0	U	2.6	5.0	10
87-86-5	Pentachlorophenol	1	<6.0	U	3.5	6.0	10
85-01-8	Phenanthrene	1	<3.0	U	1.5	3.0	10
120-12-7	Anthracene	1	<3.0	U	1.8	3.0	10
86-74-8	Carbazole	1	<3.0	U	1.9	3.0	10
84-74-2	Di-n-butylphthalate	1	<3.0	U	2.5	3.0	10
206-44-0	Fluoranthene	1	<3.0	U	2.5	3.0	10
129-00-0	Pyrene	1	<3.0	U	2.6	3.0	10
85-68-7	Butylbenzylphthalate	1	<6.0	U	3.4	6.0	10
91-94-1	3,3'-Dichlorobenzidine	1	<3.0	U	2.3	3.0	10
56-55-3	Benzo(a)anthracene	1	<3.0	U	2.3	3.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	1	<3.0	U	2.7	3.0	5.0
218-01-9	Chrysene	1	<3.0	U	2.5	3.0	10
117-84-0	Di-n-octylphthalate	1	<3.0	U	2.3	3.0	10
205-99-2	Benzo(b)fluoranthene	1	<3.0	U	2.0	3.0	10
207-08-9	Benzo(k)fluoranthene	1	<3.0	U	2.2	3.0	10
50-32-8	Benzo(a)pyrene	1	<3.0	U	2.2	3.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	1	<3.0	U	2.2	3.0	10
53-70-3	Dibenzo(a,h)anthracene	1	<3.0	U	1.9	3.0	10
191-24-2	Benzo(g,h,i)perylene	1	<3.0	U	2.2	3.0	10

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Phenol-d5	50.0	15	30	10 - 115	
Nitrobenzene-d5	50.0	37	74	40 - 110	

NW 8/19/11

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

MR17-GW16-11C

4

Laboratory: ENCO Orlando SDG: CH025-021
Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
Matrix: Ground Water Laboratory ID: A104132-04 File ID: 1h3011.D
Sampled: 07/29/11 08:20 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 17:46
Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	50.0	41	82	50 - 110	
2,4,6-Tribromophenol	50.0	43	85	40 - 125	
Terphenyl-d14	50.0	43	86	50 - 135	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	210347	7.016	293866	7.026	
Naphthalene-d8	747829	8.602	997259	8.611	
Acenaphthene-d10	448345	10.809	634054	10.818	
Phenanthrene-d10	768946	12.685	930851	12.696	
Chrysene-d12	588028	16.322	638137	16.341	
Perylene-d12	417316	19.186	443447	19.195	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

MR17-GW14-11C

5

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-05 File ID: 1h3015.D
 Sampled: 07/29/11 09:35 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 19:42
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<5.0	U	2.6	5.0	10
108-95-2	Phenol	1	<6.0	U	1.7	6.0	10
111-44-4	Bis(2-chloroethyl)ether	1	<6.0	U	2.4	6.0	10
95-57-8	2-Chlorophenol	1	<6.0	U	3.6	6.0	10
95-48-7	2-Methylphenol	1	<6.0	U	1.6	6.0	10
39638-32-9	Bis(2-chloroisopropyl)ether	1	<6.0	U	2.4	6.0	10
98-86-2	Acetophenone	1	<6.0	U	4.8	6.0	10
108-39-4/106-4 4-5	3 & 4-Methylphenol	1	<6.0	U	3.5	6.0	10
621-64-7	N-Nitroso-di-n-propylamine	1	<6.0	U	2.6	6.0	10
67-72-1	Hexachloroethane	1	<6.0	U	1.6	6.0	10
98-95-3	Nitrobenzene	1	<6.0	U	2.6	6.0	10
78-59-1	Isophorone	1	<6.0	U	2.7	6.0	10
88-75-5	2-Nitrophenol	1	<6.0	U	4.2	6.0	10
105-67-9	2,4-Dimethylphenol	1	<6.0	U	3.0	6.0	10
111-91-1	Bis(2-chloroethoxy)methane	1	<6.0	U	2.4	6.0	10
120-83-2	2,4-Dichlorophenol	1	<6.0	U	4.0	6.0	10
91-20-3	Naphthalene	1	<6.0	U	2.1	6.0	10
106-47-8	4-Chloroaniline	1	<6.0	U	2.4	6.0	10
87-68-3	Hexachlorobutadiene	1	<3.0	U	1.4	3.0	10
105-60-2	Caprolactam	1	<4.0	U	0.92	4.0	10
59-50-7	4-Chloro-3-methylphenol	1	<6.0	U	3.1	6.0	10
91-57-6	2-Methylnaphthalene	1	<3.0	U	2.1	3.0	10
77-47-4	Hexachlorocyclopentadiene	1	<3.0	U	1.1	3.0	10
88-06-2	2,4,6-Trichlorophenol	1	<6.0	U	3.3	6.0	10
95-95-4	2,4,5-Trichlorophenol	1	<3.0	U	1.5	3.0	10
92-52-4	1,1'-Biphenyl	1	<5.0	U	2.5	5.0	10
91-58-7	2-Chloronaphthalene	1	<3.0	U	1.9	3.0	10
88-74-4	2-Nitroaniline	1	<6.0	U	2.5	6.0	10
131-11-3	Dimethylphthalate	1	<3.0	U	2.0	3.0	10
606-20-2	2,6-Dinitrotoluene	1	<3.0	U	2.4	3.0	10
208-96-8	Acenaphthylene	1	<3.0	U	2.3	3.0	10
99-09-2	3-Nitroaniline	1	<3.0	U	2.1	3.0	10
83-32-9	Acenaphthene	1	<3.0	U	2.1	3.0	10
51-28-5	2,4-Dinitrophenol	1	<6.0	U	3.3	6.0	10

NW 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW14-11C

EPA 8270D

5

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-05 File ID: 1h3015.D
 Sampled: 07/29/11 09:35 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 19:42
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-02-7	4-Nitrophenol	1	<3.0	U	1.8	3.0	10
132-64-9	Dibenzofuran	1	<3.0	U	2.3	3.0	10
121-14-2	2,4-Dinitrotoluene	1	<3.0	U	2.1	3.0	10
84-66-2	Diethylphthalate	1	<3.0	U	2.1	3.0	10
7005-72-3	4-Chlorophenyl-phenylether	1	<3.0	U	1.9	3.0	10
86-73-7	Fluorene	1	<3.0	U	2.1	3.0	10
100-01-6	4-Nitroaniline	1	<3.0	U	2.2	3.0	10
534-52-1	2-Methyl-4,6-dinitrophenol	1	<6.0	U	4.3	6.0	10
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<6.0	U	3.8	6.0	10
101-55-3	4-Bromophenyl-phenylether	1	<3.0	U	1.4	3.0	10
118-74-1	Hexachlorobenzene	1	<3.0	U	1.2	3.0	10
1912-24-9	Atrazine	1	<5.0	U	2.6	5.0	10
87-86-5	Pentachlorophenol	1	<6.0	U	3.5	6.0	10
85-01-8	Phenanthrene	1	<3.0	U	1.5	3.0	10
120-12-7	Anthracene	1	<3.0	U	1.8	3.0	10
86-74-8	Carbazole	1	<3.0	U	1.9	3.0	10
84-74-2	Di-n-butylphthalate	1	<3.0	U	2.5	3.0	10
206-44-0	Fluoranthene	1	<3.0	U	2.5	3.0	10
129-00-0	Pyrene	1	<3.0	U	2.6	3.0	10
85-68-7	Butylbenzylphthalate	1	<6.0	U	3.4	6.0	10
91-94-1	3,3'-Dichlorobenzidine	1	<3.0	U	2.3	3.0	10
56-55-3	Benzo(a)anthracene	1	<3.0	U	2.3	3.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	1	<3.0	U	2.7	3.0	5.0
218-01-9	Chrysene	1	<3.0	U	2.5	3.0	10
117-84-0	Di-n-octylphthalate	1	<3.0	U	2.3	3.0	10
205-99-2	Benzo(b)fluoranthene	1	<3.0	U	2.0	3.0	10
207-08-9	Benzo(k)fluoranthene	1	<3.0	U	2.2	3.0	10
50-32-8	Benzo(a)pyrene	1	<3.0	U	2.2	3.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	1	<3.0	U	2.2	3.0	10
53-70-3	Dibenzo(a,h)anthracene	1	<3.0	U	1.9	3.0	10
191-24-2	Benzo(g,h,i)perylene	1	<3.0	U	2.2	3.0	10

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Phenol-d5	50.0	12	24	10 - 115	
Nitrobenzene-d5	50.0	30	60	40 - 110	

NW 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW14-11C

EPA 8270D

5

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-05 File ID: 1h3015.D
 Sampled: 07/29/11 09:35 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 19:42
 Solids: Preparation: EPA 3510C MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	50.0	34	68	50 - 110	
2,4,6-Tribromophenol	50.0	39	78	40 - 125	
Terphenyl-d14	50.0	40	80	50 - 135	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	296258	7.026	293866	7.026	
Naphthalene-d8	1049997	8.601	997259	8.611	
Acenaphthene-d10	628472	10.809	634054	10.818	
Phenanthrene-d10	1094882	12.685	930851	12.696	
Chrysene-d12	832593	16.331	638137	16.341	
Perylene-d12	604667	19.194	443447	19.195	

* Values outside of QC limits

rev 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW15-11C

EPA 8270D

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-06 File ID: 1h3016.D
 Sampled: 07/29/11 09:40 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 20:11
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<5.0	U	2.6	5.0	10
108-95-2	Phenol	1	<6.0	U	1.7	6.0	10
111-44-4	Bis(2-chloroethyl)ether	1	<6.0	U	2.4	6.0	10
95-57-8	2-Chlorophenol	1	<6.0	U	3.6	6.0	10
95-48-7	2-Methylphenol	1	<6.0	U	1.6	6.0	10
39638-32-9	Bis(2-chloroisopropyl)ether	1	<6.0	U	2.4	6.0	10
98-86-2	Acetophenone	1	<6.0	U	4.8	6.0	10
108-39-4/106-4 4-5	3 & 4-Methylphenol	1	<6.0	U	3.5	6.0	10
621-64-7	N-Nitroso-di-n-propylamine	1	<6.0	U	2.6	6.0	10
67-72-1	Hexachloroethane	1	<6.0	U	1.6	6.0	10
98-95-3	Nitrobenzene	1	<6.0	U	2.6	6.0	10
78-59-1	Isophorone	1	<6.0	U	2.7	6.0	10
88-75-5	2-Nitrophenol	1	<6.0	U	4.2	6.0	10
105-67-9	2,4-Dimethylphenol	1	<6.0	U	3.0	6.0	10
111-91-1	Bis(2-chloroethoxy)methane	1	<6.0	U	2.4	6.0	10
120-83-2	2,4-Dichlorophenol	1	<6.0	U	4.0	6.0	10
91-20-3	Naphthalene	1	<6.0	U	2.1	6.0	10
106-47-8	4-Chloroaniline	1	<6.0	U	2.4	6.0	10
87-68-3	Hexachlorobutadiene	1	<3.0	U	1.4	3.0	10
105-60-2	Caprolactam	1	<4.0	U	0.92	4.0	10
59-50-7	4-Chloro-3-methylphenol	1	<6.0	U	3.1	6.0	10
91-57-6	2-Methylnaphthalene	1	<3.0	U	2.1	3.0	10
77-47-4	Hexachlorocyclopentadiene	1	<3.0	U	1.1	3.0	10
88-06-2	2,4,6-Trichlorophenol	1	<6.0	U	3.3	6.0	10
95-95-4	2,4,5-Trichlorophenol	1	<3.0	U	1.5	3.0	10
92-52-4	1,1'-Biphenyl	1	<5.0	U	2.5	5.0	10
91-58-7	2-Chloronaphthalene	1	<3.0	U	1.9	3.0	10
88-74-4	2-Nitroaniline	1	<6.0	U	2.5	6.0	10
131-11-3	Dimethylphthalate	1	<3.0	U	2.0	3.0	10
606-20-2	2,6-Dinitrotoluene	1	<3.0	U	2.4	3.0	10
208-96-8	Acenaphthylene	1	<3.0	U	2.3	3.0	10
99-09-2	3-Nitroaniline	1	<3.0	U	2.1	3.0	10
83-32-9	Acenaphthene	1	<3.0	U	2.1	3.0	10
51-28-5	2,4-Dinitrophenol	1	<6.0	U	3.3	6.0	10

mw 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW15-11C

EPA 8270D

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-06 File ID: 1h3016.D
 Sampled: 07/29/11 09:40 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 20:11
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-02-7	4-Nitrophenol	1	<3.0	U	1.8	3.0	10
132-64-9	Dibenzofuran	1	<3.0	U	2.3	3.0	10
121-14-2	2,4-Dinitrotoluene	1	<3.0	U	2.1	3.0	10
84-66-2	Diethylphthalate	1	<3.0	U	2.1	3.0	10
7005-72-3	4-Chlorophenyl-phenylether	1	<3.0	U	1.9	3.0	10
86-73-7	Fluorene	1	<3.0	U	2.1	3.0	10
100-01-6	4-Nitroaniline	1	<3.0	U	2.2	3.0	10
534-52-1	2-Methyl-4,6-dinitrophenol	1	<6.0	U	4.3	6.0	10
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<6.0	U	3.8	6.0	10
101-55-3	4-Bromophenyl-phenylether	1	<3.0	U	1.4	3.0	10
118-74-1	Hexachlorobenzene	1	<3.0	U	1.2	3.0	10
1912-24-9	Atrazine	1	<5.0	U	2.6	5.0	10
87-86-5	Pentachlorophenol	1	<6.0	U	3.5	6.0	10
85-01-8	Phenanthrene	1	<3.0	U	1.5	3.0	10
120-12-7	Anthracene	1	<3.0	U	1.8	3.0	10
86-74-8	Carbazole	1	<3.0	U	1.9	3.0	10
84-74-2	Di-n-butylphthalate	1	<3.0	U	2.5	3.0	10
206-44-0	Fluoranthene	1	<3.0	U	2.5	3.0	10
129-00-0	Pyrene	1	<3.0	U	2.6	3.0	10
85-68-7	Butylbenzylphthalate	1	<6.0	U	3.4	6.0	10
91-94-1	3,3'-Dichlorobenzidine	1	<3.0	U	2.3	3.0	10
56-55-3	Benzo(a)anthracene	1	<3.0	U	2.3	3.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	1	<3.0	U	2.7	3.0	5.0
218-01-9	Chrysene	1	<3.0	U	2.5	3.0	10
117-84-0	Di-n-octylphthalate	1	<3.0	U	2.3	3.0	10
205-99-2	Benzo(b)fluoranthene	1	<3.0	U	2.0	3.0	10
207-08-9	Benzo(k)fluoranthene	1	<3.0	U	2.2	3.0	10
50-32-8	Benzo(a)pyrene	1	<3.0	U	2.2	3.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	1	<3.0	U	2.2	3.0	10
53-70-3	Dibenzo(a,h)anthracene	1	<3.0	U	1.9	3.0	10
191-24-2	Benzo(g,h,i)perylene	1	<3.0	U	2.2	3.0	10

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Phenol-d5	50.0	12	24	10 - 115	
Nitrobenzene-d5	50.0	26	52	40 - 110	

LW 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW15-11C

EPA 8270D

Laboratory: ENCO Orlando SDG: CH025-021
Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
Matrix: Ground Water Laboratory ID: A104132-06 File ID: 1h3016.D
Sampled: 07/29/11 09:40 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 20:11
Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	50.0	29	57	50 - 110	
2,4,6-Tribromophenol	50.0	34	69	40 - 125	
Terphenyl-d14	50.0	35	69	50 - 135	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	279676	7.026	293866	7.026	
Naphthalene-d8	988694	8.602	997259	8.611	
Acenaphthene-d10	597319	10.809	634054	10.818	
Phenanthrene-d10	1009034	12.685	930851	12.696	
Chrysene-d12	755844	16.331	638137	16.341	
Perylene-d12	528772	19.195	443447	19.195	

* Values outside of QC limits

hw 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW09-11C

EPA 8270D

Laboratory: ENCO Orlando SDG: CH025-021

Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41

Matrix: Ground Water Laboratory ID: A104132-07 File ID: 1h3017.D

Sampled: 07/28/11 17:40 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 20:40

Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL

Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<5.0	U	2.6	5.0	10
108-95-2	Phenol	1	<6.0	U	1.7	6.0	10
111-44-4	Bis(2-chloroethyl)ether	1	<6.0	U	2.4	6.0	10
95-57-8	2-Chlorophenol	1	<6.0	U	3.6	6.0	10
95-48-7	2-Methylphenol	1	<6.0	U	1.6	6.0	10
39638-32-9	Bis(2-chloroisopropyl)ether	1	<6.0	U	2.4	6.0	10
98-86-2	Acetophenone	1	<6.0	U	4.8	6.0	10
108-39-4/106-4 4-5	3 & 4-Methylphenol	1	<6.0	U	3.5	6.0	10
621-64-7	N-Nitroso-di-n-propylamine	1	<6.0	U	2.6	6.0	10
67-72-1	Hexachloroethane	1	<6.0	U	1.6	6.0	10
98-95-3	Nitrobenzene	1	<6.0	U	2.6	6.0	10
78-59-1	Isophorone	1	<6.0	U	2.7	6.0	10
88-75-5	2-Nitrophenol	1	<6.0	U	4.2	6.0	10
105-67-9	2,4-Dimethylphenol	1	<6.0	U	3.0	6.0	10
111-91-1	Bis(2-chloroethoxy)methane	1	<6.0	U	2.4	6.0	10
120-83-2	2,4-Dichlorophenol	1	<6.0	U	4.0	6.0	10
91-20-3	Naphthalene	1	<6.0	U	2.1	6.0	10
106-47-8	4-Chloroaniline	1	<6.0	U	2.4	6.0	10
87-68-3	Hexachlorobutadiene	1	<3.0	U	1.4	3.0	10
105-60-2	Caprolactam	1	<4.0	U	0.92	4.0	10
59-50-7	4-Chloro-3-methylphenol	1	<6.0	U	3.1	6.0	10
91-57-6	2-Methylnaphthalene	1	<3.0	U	2.1	3.0	10
77-47-4	Hexachlorocyclopentadiene	1	<3.0	U	1.1	3.0	10
88-06-2	2,4,6-Trichlorophenol	1	<6.0	U	3.3	6.0	10
95-95-4	2,4,5-Trichlorophenol	1	<3.0	U	1.5	3.0	10
92-52-4	1,1'-Biphenyl	1	<5.0	U	2.5	5.0	10
91-58-7	2-Chloronaphthalene	1	<3.0	U	1.9	3.0	10
88-74-4	2-Nitroaniline	1	<6.0	U	2.5	6.0	10
131-11-3	Dimethylphthalate	1	<3.0	U	2.0	3.0	10
606-20-2	2,6-Dinitrotoluene	1	<3.0	U	2.4	3.0	10
208-96-8	Acenaphthylene	1	<3.0	U	2.3	3.0	10
99-09-2	3-Nitroaniline	1	<3.0	U	2.1	3.0	10
83-32-9	Acenaphthene	1	<3.0	U	2.1	3.0	10
51-28-5	2,4-Dinitrophenol	1	<6.0	U	3.3	6.0	10

NW 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW09-11C

EPA 8270D

7

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-07 File ID: 1h3017.D
 Sampled: 07/28/11 17:40 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 20:40
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-02-7	4-Nitrophenol	1	<3.0	U	1.8	3.0	10
132-64-9	Dibenzofuran	1	<3.0	U	2.3	3.0	10
121-14-2	2,4-Dinitrotoluene	1	<3.0	U	2.1	3.0	10
84-66-2	Diethylphthalate	1	<3.0	U	2.1	3.0	10
7005-72-3	4-Chlorophenyl-phenylether	1	<3.0	U	1.9	3.0	10
86-73-7	Fluorene	1	<3.0	U	2.1	3.0	10
100-01-6	4-Nitroaniline	1	<3.0	U	2.2	3.0	10
534-52-1	2-Methyl-4,6-dinitrophenol	1	<6.0	U	4.3	6.0	10
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<6.0	U	3.8	6.0	10
101-55-3	4-Bromophenyl-phenylether	1	<3.0	U	1.4	3.0	10
118-74-1	Hexachlorobenzene	1	<3.0	U	1.2	3.0	10
1912-24-9	Atrazine	1	<5.0	U	2.6	5.0	10
87-86-5	Pentachlorophenol	1	<6.0	U	3.5	6.0	10
85-01-8	Phenanthrene	1	<3.0	U	1.5	3.0	10
120-12-7	Anthracene	1	<3.0	U	1.8	3.0	10
86-74-8	Carbazole	1	<3.0	U	1.9	3.0	10
84-74-2	Di-n-butylphthalate	1	<3.0	U	2.5	3.0	10
206-44-0	Fluoranthene	1	<3.0	U	2.5	3.0	10
129-00-0	Pyrene	1	<3.0	U	2.6	3.0	10
85-68-7	Butylbenzylphthalate	1	<6.0	U	3.4	6.0	10
91-94-1	3,3'-Dichlorobenzidine	1	<3.0	U	2.3	3.0	10
56-55-3	Benzo(a)anthracene	1	<3.0	U	2.3	3.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	1	<3.0	U	2.7	3.0	5.0
218-01-9	Chrysene	1	<3.0	U	2.5	3.0	10
117-84-0	Di-n-octylphthalate	1	<3.0	U	2.3	3.0	10
205-99-2	Benzo(b)fluoranthene	1	<3.0	U	2.0	3.0	10
207-08-9	Benzo(k)fluoranthene	1	<3.0	U	2.2	3.0	10
50-32-8	Benzo(a)pyrene	1	<3.0	U	2.2	3.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	1	<3.0	U	2.2	3.0	10
53-70-3	Dibenzo(a,h)anthracene	1	<3.0	U	1.9	3.0	10
191-24-2	Benzo(g,h,i)perylene	1	<3.0	U	2.2	3.0	10

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Phenol-d5	50.0	12	23	10 - 115	
Nitrobenzene-d5	50.0	28	57	40 - 110	

mw 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW09-11C

EPA 8270D

Laboratory: ENCO Orlando SDG: CH025-021
Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
Matrix: Ground Water Laboratory ID: A104132-07 File ID: 1h3017.D
Sampled: 07/28/11 17:40 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 20:40
Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	50.0	32	65	50 - 110	
2,4,6-Tribromophenol	50.0	33	67	40 - 125	
Terphenyl-d14	50.0	36	72	50 - 135	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	211989	7.016	293866	7.026	
Naphthalene-d8	758649	8.602	997259	8.611	
Acenaphthene-d10	448635	10.809	634054	10.818	
Phenanthrene-d10	721582	12.685	930851	12.696	
Chrysene-d12	500754	16.322	638137	16.341	
Perylene-d12	374651	19.186	443447	19.195	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

MR17-GW11-11C

EPA 8270D

9

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-09 File ID: 1h3018.D
 Sampled: 07/28/11 17:20 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 21:09
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<5.0	U	2.6	5.0	10
108-95-2	Phenol	1	<6.0	U	1.7	6.0	10
111-44-4	Bis(2-chloroethyl)ether	1	<6.0	U	2.4	6.0	10
95-57-8	2-Chlorophenol	1	<6.0	U	3.6	6.0	10
95-48-7	2-Methylphenol	1	<6.0	U	1.6	6.0	10
39638-32-9	Bis(2-chloroisopropyl)ether	1	<6.0	U	2.4	6.0	10
98-86-2	Acetophenone	1	<6.0	U	4.8	6.0	10
108-39-4/106-4 4-5	3 & 4-Methylphenol	1	<6.0	U	3.5	6.0	10
621-64-7	N-Nitroso-di-n-propylamine	1	<6.0	U	2.6	6.0	10
67-72-1	Hexachloroethane	1	<6.0	U	1.6	6.0	10
98-95-3	Nitrobenzene	1	<6.0	U	2.6	6.0	10
78-59-1	Isophorone	1	<6.0	U	2.7	6.0	10
88-75-5	2-Nitrophenol	1	<6.0	U	4.2	6.0	10
105-67-9	2,4-Dimethylphenol	1	<6.0	U	3.0	6.0	10
111-91-1	Bis(2-chloroethoxy)methane	1	<6.0	U	2.4	6.0	10
120-83-2	2,4-Dichlorophenol	1	<6.0	U	4.0	6.0	10
91-20-3	Naphthalene	1	<6.0	U	2.1	6.0	10
106-47-8	4-Chloroaniline	1	<6.0	U	2.4	6.0	10
87-68-3	Hexachlorobutadiene	1	<3.0	U	1.4	3.0	10
105-60-2	Caprolactam	1	<4.0	U	0.92	4.0	10
59-50-7	4-Chloro-3-methylphenol	1	<6.0	U	3.1	6.0	10
91-57-6	2-Methylnaphthalene	1	<3.0	U	2.1	3.0	10
77-47-4	Hexachlorocyclopentadiene	1	<3.0	U	1.1	3.0	10
88-06-2	2,4,6-Trichlorophenol	1	<6.0	U	3.3	6.0	10
95-95-4	2,4,5-Trichlorophenol	1	<3.0	U	1.5	3.0	10
92-52-4	1,1'-Biphenyl	1	<5.0	U	2.5	5.0	10
91-58-7	2-Chloronaphthalene	1	<3.0	U	1.9	3.0	10
88-74-4	2-Nitroaniline	1	<6.0	U	2.5	6.0	10
131-11-3	Dimethylphthalate	1	<3.0	U	2.0	3.0	10
606-20-2	2,6-Dinitrotoluene	1	<3.0	U	2.4	3.0	10
208-96-8	Acenaphthylene	1	<3.0	U	2.3	3.0	10
99-09-2	3-Nitroaniline	1	<3.0	U	2.1	3.0	10
83-32-9	Acenaphthene	1	<3.0	U	2.1	3.0	10
51-28-5	2,4-Dinitrophenol	1	<6.0	U	3.3	6.0	10

LW 8/19/11

ORGANIC ANALYSIS DATA SHEET

MR17-GW11-11C

EPA 8270D

9

Laboratory: ENCO Orlando SDG: CH025-021
 Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
 Matrix: Ground Water Laboratory ID: A104132-09 File ID: 1h3018.D
 Sampled: 07/28/11 17:20 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 21:09
 Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
 Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-02-7	4-Nitrophenol	1	<3.0	U	1.8	3.0	10
132-64-9	Dibenzofuran	1	<3.0	U	2.3	3.0	10
121-14-2	2,4-Dinitrotoluene	1	<3.0	U	2.1	3.0	10
84-66-2	Diethylphthalate	1	<3.0	U	2.1	3.0	10
7005-72-3	4-Chlorophenyl-phenylether	1	<3.0	U	1.9	3.0	10
86-73-7	Fluorene	1	<3.0	U	2.1	3.0	10
100-01-6	4-Nitroaniline	1	<3.0	U	2.2	3.0	10
534-52-1	2-Methyl-4,6-dinitrophenol	1	<6.0	U	4.3	6.0	10
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<6.0	U	3.8	6.0	10
101-55-3	4-Bromophenyl-phenylether	1	<3.0	U	1.4	3.0	10
118-74-1	Hexachlorobenzene	1	<3.0	U	1.2	3.0	10
1912-24-9	Atrazine	1	<5.0	U	2.6	5.0	10
87-86-5	Pentachlorophenol	1	<6.0	U	3.5	6.0	10
85-01-8	Phenanthrene	1	<3.0	U	1.5	3.0	10
120-12-7	Anthracene	1	<3.0	U	1.8	3.0	10
86-74-8	Carbazole	1	<3.0	U	1.9	3.0	10
84-74-2	Di-n-butylphthalate	1	<3.0	U	2.5	3.0	10
206-44-0	Fluoranthene	1	<3.0	U	2.5	3.0	10
129-00-0	Pyrene	1	<3.0	U	2.6	3.0	10
85-68-7	Butylbenzylphthalate	1	<6.0	U	3.4	6.0	10
91-94-1	3,3'-Dichlorobenzidine	1	<3.0	U	2.3	3.0	10
56-55-3	Benzo(a)anthracene	1	<3.0	U	2.3	3.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	1	<3.0	U	2.7	3.0	5.0
218-01-9	Chrysene	1	<3.0	U	2.5	3.0	10
117-84-0	Di-n-octylphthalate	1	<3.0	U	2.3	3.0	10
205-99-2	Benzo(b)fluoranthene	1	<3.0	U	2.0	3.0	10
207-08-9	Benzo(k)fluoranthene	1	<3.0	U	2.2	3.0	10
50-32-8	Benzo(a)pyrene	1	<3.0	U	2.2	3.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	1	<3.0	U	2.2	3.0	10
53-70-3	Dibenzo(a,h)anthracene	1	<3.0	U	1.9	3.0	10
191-24-2	Benzo(g,h,i)perylene	1	<3.0	U	2.2	3.0	10

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Phenol-d5	50.0	16	31	10 - 115	
Nitrobenzene-d5	50.0	38	76	40 - 110	

NW 8/19/11

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

MRI7-GW11-11C

9

Laboratory: ENCO Orlando SDG: CH025-021
Client: CH2M Hill, Inc. (CH025) Project: MCB CamLej Site UXO-17 CTO-WE41
Matrix: Ground Water Laboratory ID: A104132-09 File ID: 1h3018.D
Sampled: 07/28/11 17:20 Prepared: 08/01/11 10:00 Analyzed: 08/03/11 21:09
Solids: Preparation: EPA 3510C_MS Initial/Final: 500 mL / 0.5 mL
Batch: 1H01001 Sequence: AA16041 Calibration: 1108010 Instrument: OSVGCMS1

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	50.0	41	83	50 - 110	
2,4,6-Tribromophenol	50.0	41	82	40 - 125	
Terphenyl-d14	50.0	39	77	50 - 135	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	294607	7.026	293866	7.026	
Naphthalene-d8	1032656	8.601	997259	8.611	
Acenaphthene-d10	609903	10.809	634054	10.818	
Phenanthrene-d10	1002787	12.685	930851	12.696	
Chrysene-d12	745628	16.322	638137	16.341	
Perylene-d12	533472	19.195	443447	19.195	

* Values outside of QC limits

NW 8/19/11

Project: MCB Camp Lejeune (CTO-141), Jacksonville, NC
Laboratory: Empirical Laboratories, LLC
Sample Delivery Group: 1012017
Fraction: Inorganic
Matrix: Solid
Report Date: 2/21/2011

This analytical quality assurance report is based upon a review of analytical data generated for soil samples. One equipment blank, one field duplicate sample, and one matrix spike/matrix spike duplicate were submitted with the samples in this SDG. The sample locations, laboratory identification numbers, sample collection date, sample matrix, and analyses performed are presented in Table 1.

The samples were analyzed for metals. The sample analyses were performed in accordance with the procedures outlined in the method referenced at the end of this report.

All sample analyses have undergone an analytical quality assurance review to ensure adherence to the required protocols. Results have been validated or qualified according to general guidance provided in the "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", OSWER 9240.1-45 EPA 540-R-04-004, October 2004 and "Data Validation Standard Operating Procedures for Contract Laboratory Program Routine Analytical Services", USEPA Region IV, Revision 2.1, July 1999.

These documents specify procedures for validating data generated for CLP analyses. Therefore, the quality control requirements specified in the methods and associated acceptance criteria were also used to evaluate the non-CLP data. The parameters presented on the following page were evaluated.

- X • Data Completeness
- X • Chain of Custody Documentation
- X • Holding Times
- X • Initial and Continuing Calibrations
- X • ICP Interference Check Sample Results
- X • Laboratory and Field Blank Analysis Results
 - Matrix Spike Recoveries and Reproducibility
 - Laboratory Duplicate Analysis Results
 - ICP Serial Dilution Results
- X • Field Duplicate Analysis Results
- X • Laboratory Control Sample Results
 - GFAA Post-Digestion Spike Recovery/Duplicate Burn Precision
- X • Qualitative Identification
- X • Quantitation/Reporting Limits

X - Denotes parameter evaluated.

It is recommended that the data only be used according to the qualifiers presented, and discussed in this report. All other data should be considered qualitatively and quantitatively valid as reported by the laboratory, based on the items evaluated.

Report Approved By:

Shawne M. Rodgers
President

Date

1.0 DATA COMPLETENESS

The data package was complete.

2.0 CHAIN OF CUSTODY DOCUMENTATION

The chain of custody (COC) documentation was complete.

3.0 HOLDING TIMES

All criteria were met. No qualifiers were applied.

4.0 INITIAL AND CONTINUING CALIBRATIONS

All criteria were met. No qualifiers were applied.

5.0 ICP INTERFERENCE CHECK SAMPLE RESULTS

All criteria were met. No qualifiers were applied.

6.0 LABORATORY AND FIELD BLANK ANALYSIS RESULTS

All criteria were met. No qualifiers were applied.

7.0 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND REPRODUCIBILITY

The laboratory did not select a site sample to perform matrix spike analyses. Therefore, the associated sample data could not be evaluated based on this parameter. This should be noted when assessing the sample data.

8.0 LABORATORY DUPLICATE RESULTS

The laboratory did not select a site sample to perform laboratory duplicate analyses. Therefore, the associated sample data could not be evaluated

based on this parameter. This should be noted when assessing the sample data.

9.0 ICP SERIAL DILUTION RESULTS

The laboratory did not select a site sample to perform ICP serial dilution analyses. Therefore, the associated sample data could not be evaluated based on this parameter. This should be noted when assessing the sample data.

10.0 FIELD DUPLICATE RESULTS

Duplicate samples MR17-DU02-SS02-10D and MR17-DU02D-SS03-10D were submitted to the laboratory evaluate sampling and analytical precision for those analytes determined to be present. Results for these duplicate samples are presented in Table 2. There are no USEPA-established acceptance criteria for field duplicate samples. EDQ uses internal an acceptance criterion of 40 percent for values greater than five times the reporting limit (RL) (or \pm the RL for results less than five times the RL).

11.0 LABORATORY CONTROL SAMPLE RESULTS

All criteria were met. No qualifiers were applied.

12.0 GFAA POST-DIGESTION SPIKE/DUPLICATE BURN

This parameter is not applicable to the analyses completed.

13.0 QUALITATIVE IDENTIFICATION

All criteria were met. No qualifiers were applied.

14.0 QUANTITATION/REPORTING LIMITS

As required by USEPA protocol, all analytes, which were qualitatively identified at concentrations below their respective RLs, have been marked with "J" qualifiers to indicate that they are quantitative estimates.

METHODOLOGY REFERENCES

Analysis	Reference
Metals (Except Mercury)	Method 6010B, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997
Mercury	Method 7470A, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997

Project: MCB Camp Lejeune (CTO-141), Jacksonville, NC
Laboratory: Empirical Laboratories, LLC
Sample Delivery Group: 1012017
Fraction: Organic
Matrix: Solid
Report Date: 2/21/2011

This analytical quality assurance report is based upon a review of analytical data generated for soilsamples. One equipment blank, one field duplicate sample, and one matrix spike/matrix spike duplicate were submitted with the samples in this SDG. The sample locations, laboratory identification numbers, sample collection dates, sample matrix, and analyses performed are presented in Table 1.

The samples were analyzed for explosive compounds and perchlorate. The sample analyses were performed in accordance with the procedures outlined in "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997

All sample analyses have undergone an analytical quality assurance review to ensure adherence to the required protocols. Results have been validated or qualified according to general guidance provided in the "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", OSWER 9240.1-45 EPA 540-R-04-004, October 1999, and "Data Validation Standard Operating Procedures for Contract Laboratory Program Routine Analytical Services", USEPA Region IV, Revision 2.1, July 1999.

This document specifies procedures for validating data generated for CLP analyses. Therefore, the quality control requirements specified in the methods and associated acceptance criteria were also used to evaluate the non-CLP data. The parameters presented on the following page were evaluated.

Table 1 Samples For Data Validation Review
MCB Camp Lejeune, North Carolina (CTO-141)

SAMPLE I.D.	LABORATORY ID	SDG	DATE COLLECTED	ANALYSES PERFORMED				
				MATRIX	8330	6850	6010B	7470A
Sample_Name	Lab_Sample_ID	SDG	DateTime_Collected	Total Of SDG	8330	6850	6010B	7470A
MR17-DU03-SS01-10D	1012017-01	SDG	11/30/2010 12:45	Soil	X	X	X	7471A
MR17-DU03-SS02-10D	1012017-02	SDG	11/30/2010 13:05	Soil	X	X	X	X
MR17-DU03-SS03-10D	1012017-03	SDG	11/30/2010 13:20	Soil	X	X	X	X
MR17-DU02-SS01-10D	1012017-04	SDG	11/30/2010 13:35	Soil	X	X	X	X
MR17-DU02-SS02-10D	1012017-05	SDG	11/30/2010 13:40	Soil	X	X	X	X
MR17-DU02D-SS03-10D	1012017-06	SDG	11/30/2010 13:55	Soil	X	X	X	X
MR17-DU02-SS03-10D	1012017-07	SDG	11/30/2010 13:50	Soil	X	X	X	X
MR17-DU01-SS01-10D	1012017-08	SDG	11/30/2010 14:20	Soil	X	X	X	X
MR17-DU01-SS02-10D	1012017-09	SDG	11/30/2010 14:25	Soil	X	X	X	X
MR17-DU01-SS03-10D	1012017-10	SDG	11/30/2010 14:30	Soil	X	X	X	X
MR17-EB-113010	1012017-11	SDG	11/30/2010 15:30	Equipment Blank	X	X	X	X

ANALYSIS DATA SHEET

MR17-DUO3-SS01-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012017Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012017-01Sampled: 11/30/10 12:45Received: 12/01/10 08:11% Solids: 90.06

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0200	0.0144	0.0366	0.0366	1	J	SW7471A	0L10003	12/16/10 12:59
7429-90-5	Aluminum	3820	2.85	5.69	11.4	1		SW6010B	0L15010	12/16/10 14:26
7440-36-0	Antimony		0.285	0.456	0.569	1	U	SW6010B	0L15010	12/16/10 14:26
7440-38-2	Arsenic	0.820	0.171	0.342	0.569	1		SW6010B	0L15010	12/16/10 14:26
7440-39-3	Barium	11.5	0.285	0.569	2.28	1		SW6010B	0L15010	12/16/10 14:26
7440-41-7	Beryllium	0.0800	0.0569	0.114	0.285	1	J	SW6010B	0L15010	12/16/10 14:26
7440-43-9	Cadmium	0.228	0.0569	0.114	0.285	1	J	SW6010B	0L15010	12/16/10 14:26
7440-70-2	Calcium	3820	56.9	114	285	1		SW6010B	0L15010	12/16/10 14:26
7440-47-3	Chromium	5.39	0.114	0.228	0.569	1		SW6010B	0L15010	12/16/10 14:26
7440-48-4	Cobalt		0.285	0.569	0.712	1	U	SW6010B	0L15010	12/16/10 14:26
7440-50-8	Copper	2.07	0.228	0.456	0.569	1		SW6010B	0L15010	12/16/10 14:26
7439-89-6	Iron	1990	1.71	3.42	5.69	1		SW6010B	0L15010	12/16/10 14:26
7439-92-1	Lead	12.7	0.0854	0.171	0.171	1		SW6010B	0L15010	12/16/10 14:26
7439-95-4	Magnesium	206	56.9	171	285	1	J	SW6010B	0L15010	12/16/10 14:26
7439-96-5	Manganese	9.47	0.171	0.342	0.854	1	X	SW6010B	0L15010	12/16/10 14:26
7440-02-0	Nickel	1.05	0.171	0.342	0.569	1		SW6010B	0L15010	12/16/10 14:26
7440-09-7	Potassium	112	56.9	171	285	1	J	SW6010B	0L15010	12/16/10 14:26
7782-49-2	Selenium	0.187	0.171	0.285	0.569	1	J	SW6010B	0L15010	12/16/10 14:26
7440-22-4	Silver		0.114	0.114	0.569	1	X U	SW6010B	0L15010	12/16/10 14:26
7440-23-5	Sodium		56.9	171	285	1	U	SW6010B	0L15010	12/16/10 14:26
7440-28-0	Thallium		0.171	0.228	0.456	1	U	SW6010B	0L15010	12/16/10 14:26
7440-62-2	Vanadium	5.53	0.285	0.569	0.712	1	X	SW6010B	0L15010	12/16/10 14:26
7440-66-6	Zinc	18.9	0.285	0.569	1.14	1		SW6010B	0L15010	12/16/10 14:26

ANALYSIS DATA SHEET

MR17-DUO3-SS02-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012017Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012017-02Sampled: 11/30/10 13:05Received: 12/01/10 08:11% Solids: 91.15

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0193	0.0130	0.0329	0.0330	1	J	SW7471A	0L10003	12/16/10 13:01
7429-90-5	Aluminum	3980	2.62	5.25	10.5	1		SW6010B	0L15010	12/16/10 14:31
7440-36-0	Antimony		0.262	0.420	0.525	1	U	SW6010B	0L15010	12/16/10 14:31
7440-38-2	Arsenic	0.663	0.157	0.315	0.525	1		SW6010B	0L15010	12/16/10 14:31
7440-39-3	Barium	11.3	0.262	0.525	2.10	1		SW6010B	0L15010	12/16/10 14:31
7440-41-7	Beryllium	0.0743	0.0525	0.105	0.262	1	J	SW6010B	0L15010	12/16/10 14:31
7440-43-9	Cadmium	0.0964	0.0525	0.105	0.262	1	J	SW6010B	0L15010	12/16/10 14:31
7440-70-2	Calcium	504	52.5	105	262	1		SW6010B	0L15010	12/16/10 14:31
7440-47-3	Chromium	4.40	0.105	0.210	0.525	1		SW6010B	0L15010	12/16/10 14:31
7440-48-4	Cobalt		0.262	0.525	0.656	1	U	SW6010B	0L15010	12/16/10 14:31
7440-50-8	Copper	1.08	0.210	0.420	0.525	1		SW6010B	0L15010	12/16/10 14:31
7439-89-6	Iron	1770	1.57	3.15	5.25	1		SW6010B	0L15010	12/16/10 14:31
7439-92-1	Lead	8.52	0.0787	0.157	0.157	1		SW6010B	0L15010	12/16/10 14:31
7439-95-4	Magnesium	137	52.5	157	262	1	J	SW6010B	0L15010	12/16/10 14:31
7439-96-5	Manganese	5.43	0.157	0.315	0.787	1	X	SW6010B	0L15010	12/16/10 14:31
7440-02-0	Nickel	0.768	0.157	0.315	0.525	1		SW6010B	0L15010	12/16/10 14:31
7440-09-7	Potassium	110	52.5	157	262	1	J	SW6010B	0L15010	12/16/10 14:31
7782-49-2	Selenium	0.290	0.157	0.262	0.525	1	J	SW6010B	0L15010	12/16/10 14:31
7440-22-4	Silver		0.105	0.105	0.525	1	M/U	SW6010B	0L15010	12/16/10 14:31
7440-23-5	Sodium		52.5	157	262	1	U	SW6010B	0L15010	12/16/10 14:31
7440-28-0	Thallium		0.210	0.210	0.420	1	M/U	SW6010B	0L15010	12/16/10 14:31
7440-62-2	Vanadium	5.78	0.262	0.525	0.656	1	X	SW6010B	0L15010	12/16/10 14:31
7440-66-6	Zinc	3.70	0.262	0.525	1.05	1		SW6010B	0L15010	12/16/10 14:31

ANALYSIS DATA SHEET

MR17-DUO3-SS03-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012017Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012017-03Sampled: 11/30/10 13:20Received: 12/01/10 08:11% Solids: 91.44

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0171	0.0125	0.0318	0.0330	1	J	SW7471A	0L10003	12/16/10 13:03
7429-90-5	Aluminum	2470	2.71	5.41	10.8	1		SW6010B	0L15010	12/16/10 14:35
7440-36-0	Antimony		0.271	0.433	0.541	1	U	SW6010B	0L15010	12/16/10 14:35
7440-38-2	Arsenic	0.567	0.162	0.325	0.541	1		SW6010B	0L15010	12/16/10 14:35
7440-39-3	Barium	8.55	0.271	0.541	2.17	1		SW6010B	0L15010	12/16/10 14:35
7440-41-7	Beryllium		0.0541	0.108	0.271	1	U	SW6010B	0L15010	12/16/10 14:35
7440-43-9	Cadmium	0.108	0.0541	0.108	0.271	1	J	SW6010B	0L15010	12/16/10 14:35
7440-70-2	Calcium	540	54.1	108	271	1		SW6010B	0L15010	12/16/10 14:35
7440-47-3	Chromium	3.07	0.108	0.217	0.541	1		SW6010B	0L15010	12/16/10 14:35
7440-48-4	Cobalt		0.271	0.541	0.677	1	U	SW6010B	0L15010	12/16/10 14:35
7440-50-8	Copper	0.955	0.217	0.433	0.541	1		SW6010B	0L15010	12/16/10 14:35
7439-89-6	Iron	1340	1.62	3.25	5.41	1		SW6010B	0L15010	12/16/10 14:35
7439-92-1	Lead	5.84	0.0812	0.162	0.162	1		SW6010B	0L15010	12/16/10 14:35
7439-95-4	Magnesium	105	54.1	162	271	1	J	SW6010B	0L15010	12/16/10 14:35
7439-96-5	Manganese	5.71	0.162	0.325	0.812	1	X	SW6010B	0L15010	12/16/10 14:35
7440-02-0	Nickel	0.544	0.162	0.325	0.541	1		SW6010B	0L15010	12/16/10 14:35
7440-09-7	Potassium	99.0	54.1	162	271	1	J	SW6010B	0L15010	12/16/10 14:35
7782-49-2	Selenium	0.280	0.162	0.271	0.541	1	J	SW6010B	0L15010	12/16/10 14:35
7440-22-4	Silver		0.0541	0.108	0.541	1	X U	SW6010B	0L15010	12/16/10 14:35
7440-23-5	Sodium		54.1	162	271	1	U	SW6010B	0L15010	12/16/10 14:35
7440-28-0	Thallium		0.162	0.217	0.433	1	U	SW6010B	0L15010	12/16/10 14:35
7440-62-2	Vanadium	4.02	0.271	0.541	0.677	1	X	SW6010B	0L15010	12/16/10 14:35
7440-66-6	Zinc	3.46	0.271	0.541	1.08	1		SW6010B	0L15010	12/16/10 14:35

ANALYSIS DATA SHEET

MR17-DUO2-SS01-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012017Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012017-04Sampled: 11/30/10 13:35Received: 12/01/10 08:11% Solids: 93.50

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0240	0.0123	0.0311	0.0330	1	J	SW7471A	0L10003	12/16/10 13:08
7429-90-5	Aluminum	6760	2.66	5.32	10.6	1		SW6010B	0L15010	12/16/10 14:40
7440-36-0	Antimony		0.266	0.426	0.532	1	U	SW6010B	0L15010	12/16/10 14:40
7440-38-2	Arsenic	0.528	0.160	0.319	0.532	1	J	SW6010B	0L15010	12/16/10 14:40
7440-39-3	Barium	13.3	0.266	0.532	2.13	1		SW6010B	0L15010	12/16/10 14:40
7440-41-7	Beryllium	0.0899	0.0532	0.106	0.266	1	J	SW6010B	0L15010	12/16/10 14:40
7440-43-9	Cadmium	0.0866	0.0532	0.106	0.266	1	J	SW6010B	0L15010	12/16/10 14:40
7440-70-2	Calcium	221	53.2	106	266	1	J	SW6010B	0L15010	12/16/10 14:40
7440-47-3	Chromium	6.58	0.106	0.213	0.532	1		SW6010B	0L15010	12/16/10 14:40
7440-48-4	Cobalt	0.382	0.266	0.532	0.665	1	J	SW6010B	0L15010	12/16/10 14:40
7440-50-8	Copper	1.50	0.213	0.426	0.532	1		SW6010B	0L15010	12/16/10 14:40
7439-89-6	Iron	1660	1.60	3.19	5.32	1		SW6010B	0L15010	12/16/10 14:40
7439-92-1	Lead	4.71	0.0798	0.160	0.160	1		SW6010B	0L15010	12/16/10 14:40
7439-95-4	Magnesium	273	53.2	160	266	1		SW6010B	0L15010	12/16/10 14:40
7439-96-5	Manganese	4.82	0.160	0.319	0.798	1	Y	SW6010B	0L15010	12/16/10 14:40
7440-02-0	Nickel	1.41	0.160	0.319	0.532	1		SW6010B	0L15010	12/16/10 14:40
7440-09-7	Potassium	164	53.2	160	266	1	J	SW6010B	0L15010	12/16/10 14:40
7782-49-2	Selenium		0.160	0.266	0.532	1	U	SW6010B	0L15010	12/16/10 14:40
7440-22-4	Silver		0.106	0.106	0.532	1	MYU	SW6010B	0L15010	12/16/10 14:40
7440-23-5	Sodium		53.2	160	266	1	U	SW6010B	0L15010	12/16/10 14:40
7440-28-0	Thallium		0.160	0.213	0.426	1	U	SW6010B	0L15010	12/16/10 14:40
7440-62-2	Vanadium	6.95	0.266	0.532	0.665	1	Y	SW6010B	0L15010	12/16/10 14:40
7440-66-6	Zinc	3.27	0.266	0.532	1.06	1		SW6010B	0L15010	12/16/10 14:40

ANALYSIS DATA SHEET

MR17-DUO2-SS02-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012017Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012017-05Sampled: 11/30/10 13:40Received: 12/01/10 08:11% Solids: 88.92

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0198	0.0137	0.0348	0.0348	1	J	SW7471A	0L10003	12/16/10 13:10
7429-90-5	Aluminum	6220	2.80	5.60	11.2	1		SW6010B	0L15010	12/16/10 14:44
7440-36-0	Antimony		0.280	0.448	0.560	1	U	SW6010B	0L15010	12/16/10 14:44
7440-38-2	Arsenic	0.667	0.168	0.336	0.560	1		SW6010B	0L15010	12/16/10 14:44
7440-39-3	Barium	14.2	0.280	0.560	2.24	1		SW6010B	0L15010	12/16/10 14:44
7440-41-7	Beryllium	0.0842	0.0560	0.112	0.280	1	J	SW6010B	0L15010	12/16/10 14:44
7440-43-9	Cadmium	0.0996	0.0560	0.112	0.280	1	J	SW6010B	0L15010	12/16/10 14:44
7440-70-2	Calcium	539	56.0	112	280	1		SW6010B	0L15010	12/16/10 14:44
7440-47-3	Chromium	6.24	0.112	0.224	0.560	1		SW6010B	0L15010	12/16/10 14:44
7440-48-4	Cobalt	0.374	0.280	0.560	0.699	1	J	SW6010B	0L15010	12/16/10 14:44
7440-50-8	Copper	1.76	0.224	0.448	0.560	1		SW6010B	0L15010	12/16/10 14:44
7439-89-6	Iron	1670	1.68	3.36	5.60	1		SW6010B	0L15010	12/16/10 14:44
7439-92-1	Lead	5.42	0.0839	0.168	0.168	1		SW6010B	0L15010	12/16/10 14:44
7439-95-4	Magnesium	241	56.0	168	280	1	J	SW6010B	0L15010	12/16/10 14:44
7439-96-5	Manganese	5.37	0.168	0.336	0.839	1	X	SW6010B	0L15010	12/16/10 14:44
7440-02-0	Nickel	1.43	0.168	0.336	0.560	1		SW6010B	0L15010	12/16/10 14:44
7440-09-7	Potassium	158	56.0	168	280	1	J	SW6010B	0L15010	12/16/10 14:44
7782-49-2	Selenium		0.168	0.280	0.560	1	U	SW6010B	0L15010	12/16/10 14:44
7440-22-4	Silver		0.112	0.112	0.560	1	M/Y U	SW6010B	0L15010	12/16/10 14:44
7440-23-5	Sodium		56.0	168	280	1	U	SW6010B	0L15010	12/16/10 14:44
7440-28-0	Thallium		0.168	0.224	0.448	1	U	SW6010B	0L15010	12/16/10 14:44
7440-62-2	Vanadium	7.24	0.280	0.560	0.699	1	X	SW6010B	0L15010	12/16/10 14:44
7440-66-6	Zinc	4.03	0.280	0.560	1.12	1		SW6010B	0L15010	12/16/10 14:44

ANALYSIS DATA SHEET

MR17-DUO2D-SS03-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012017Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012017-06Sampled: 11/30/10 13:55Received: 12/01/10 08:11% Solids: 88.21

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0161	0.0113	0.0288	0.0330	1	J	SW7471A	0L10003	12/16/10 13:11
7429-90-5	Aluminum	6890	2.82	5.64	11.3	1		SW6010B	0L15010	12/16/10 14:49
7440-36-0	Antimony		0.282	0.451	0.564	1	U	SW6010B	0L15010	12/16/10 14:49
7440-38-2	Arsenic	0.688	0.169	0.338	0.564	1		SW6010B	0L15010	12/16/10 14:49
7440-39-3	Barium	15.2	0.282	0.564	2.26	1		SW6010B	0L15010	12/16/10 14:49
7440-41-7	Beryllium	0.0918	0.0564	0.113	0.282	1	J	SW6010B	0L15010	12/16/10 14:49
7440-43-9	Cadmium	0.0910	0.0564	0.113	0.282	1	J	SW6010B	0L15010	12/16/10 14:49
7440-70-2	Calcium	267	56.4	113	282	1	J	SW6010B	0L15010	12/16/10 14:49
7440-47-3	Chromium	6.57	0.113	0.226	0.564	1		SW6010B	0L15010	12/16/10 14:49
7440-48-4	Cobalt	0.426	0.282	0.564	0.705	1	J	SW6010B	0L15010	12/16/10 14:49
7440-50-8	Copper	1.35	0.226	0.451	0.564	1		SW6010B	0L15010	12/16/10 14:49
7439-89-6	Iron	1870	1.69	3.38	5.64	1		SW6010B	0L15010	12/16/10 14:49
7439-92-1	Lead	6.20	0.0846	0.169	0.169	1		SW6010B	0L15010	12/16/10 14:49
7439-95-4	Magnesium	278	56.4	169	282	1	J	SW6010B	0L15010	12/16/10 14:49
7439-96-5	Manganese	5.25	0.169	0.338	0.846	1	X	SW6010B	0L15010	12/16/10 14:49
7440-02-0	Nickel	1.52	0.169	0.338	0.564	1		SW6010B	0L15010	12/16/10 14:49
7440-09-7	Potassium	172	56.4	169	282	1	J	SW6010B	0L15010	12/16/10 14:49
7782-49-2	Selenium	0.274	0.169	0.282	0.564	1	J	SW6010B	0L15010	12/16/10 14:49
7440-22-4	Silver		0.113	0.113	0.564	1	X/U	SW6010B	0L15010	12/16/10 14:49
7440-23-5	Sodium		56.4	169	282	1	U	SW6010B	0L15010	12/16/10 14:49
7440-28-0	Thallium		0.169	0.226	0.451	1	U	SW6010B	0L15010	12/16/10 14:49
7440-62-2	Vanadium	7.89	0.282	0.564	0.705	1	X	SW6010B	0L15010	12/16/10 14:49
7440-66-6	Zinc	3.88	0.282	0.564	1.13	1		SW6010B	0L15010	12/16/10 14:49

ANALYSIS DATA SHEET

MR17-DUO2-SS03-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012017Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012017-07Sampled: 11/30/10 13:50Received: 12/01/10 08:11% Solids: 94.02

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0239	0.0134	0.0340	0.0340	1	J	SW7471A	0L10003	12/16/10 13:13
7429-90-5	Aluminum	5840	2.71	5.43	10.9	1		SW6010B	0L15010	12/16/10 14:53
7440-36-0	Antimony		0.271	0.434	0.543	1	U	SW6010B	0L15010	12/16/10 14:53
7440-38-2	Arsenic	0.523	0.163	0.326	0.543	1	J	SW6010B	0L15010	12/16/10 14:53
7440-39-3	Barium	13.1	0.271	0.543	2.17	1		SW6010B	0L15010	12/16/10 14:53
7440-41-7	Beryllium	0.0809	0.0543	0.109	0.271	1	J	SW6010B	0L15010	12/16/10 14:53
7440-43-9	Cadmium	0.0867	0.0543	0.109	0.271	1	J	SW6010B	0L15010	12/16/10 14:53
7440-70-2	Calcium	284	54.3	109	271	1		SW6010B	0L15010	12/16/10 14:53
7440-47-3	Chromium	5.67	0.109	0.217	0.543	1		SW6010B	0L15010	12/16/10 14:53
7440-48-4	Cobalt	0.330	0.271	0.543	0.678	1	J	SW6010B	0L15010	12/16/10 14:53
7440-50-8	Copper	1.34	0.217	0.434	0.543	1		SW6010B	0L15010	12/16/10 14:53
7439-89-6	Iron	1600	1.63	3.26	5.43	1		SW6010B	0L15010	12/16/10 14:53
7439-92-1	Lead	6.48	0.0814	0.163	0.163	1		SW6010B	0L15010	12/16/10 14:53
7439-95-4	Magnesium	228	54.3	163	271	1	J	SW6010B	0L15010	12/16/10 14:53
7439-96-5	Manganese	4.68	0.163	0.326	0.814	1	X	SW6010B	0L15010	12/16/10 14:53
7440-02-0	Nickel	1.26	0.163	0.326	0.543	1		SW6010B	0L15010	12/16/10 14:53
7440-09-7	Potassium	142	54.3	163	271	1	J	SW6010B	0L15010	12/16/10 14:53
7782-49-2	Selenium	0.250	0.163	0.271	0.543	1	J	SW6010B	0L15010	12/16/10 14:53
7440-22-4	Silver		0.109	0.109	0.543	1	X U	SW6010B	0L15010	12/16/10 14:53
7440-23-5	Sodium		54.3	163	271	1	U	SW6010B	0L15010	12/16/10 14:53
7440-28-0	Thallium		0.163	0.217	0.434	1	U	SW6010B	0L15010	12/16/10 14:53
7440-62-2	Vanadium	6.80	0.271	0.543	0.678	1	X	SW6010B	0L15010	12/16/10 14:53
7440-66-6	Zinc	3.56	0.271	0.543	1.09	1	X	SW6010B	0L15010	12/16/10 14:53

ANALYSIS DATA SHEET

MR17-DU01-SS01-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012017Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012017-08Sampled: 11/30/10 14:20Received: 12/01/10 08:11% Solids: 95.39

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0105	0.0266	0.0330	1	U	SW7471A	0L10003	12/16/10 13:15
7429-90-5	Aluminum	1550	13.2	26.5	52.9	5	D	SW6010B	0L15010	12/17/10 18:11
7440-36-0	Antimony		0.265	0.424	0.529	1	U	SW6010B	0L15010	12/16/10 14:58
7440-38-2	Arsenic	1.84	0.159	0.318	0.529	1		SW6010B	0L15010	12/16/10 14:58
7440-39-3	Barium	3.34	0.265	0.529	2.12	1		SW6010B	0L15010	12/16/10 14:58
7440-41-7	Beryllium	0.104	0.0529	0.106	0.265	1	J	SW6010B	0L15010	12/16/10 14:58
7440-43-9	Cadmium	0.485	0.0529	0.106	0.265	1		SW6010B	0L15010	12/16/10 14:58
7440-70-2	Calcium	112000	265	529	1320	5	D	SW6010B	0L15010	12/17/10 18:11
7440-47-3	Chromium	3.39	0.106	0.212	0.529	1		SW6010B	0L15010	12/16/10 14:58
7440-48-4	Cobalt	2.40	0.265	0.529	0.662	1		SW6010B	0L15010	12/16/10 14:58
7440-50-8	Copper	1.18	0.212	0.424	0.529	1		SW6010B	0L15010	12/16/10 14:58
7439-89-6	Iron	1920	1.59	3.18	5.29	1		SW6010B	0L15010	12/16/10 14:58
7439-92-1	Lead	2.31	0.397	0.794	0.794	5	D	SW6010B	0L15010	12/17/10 18:11
7439-95-4	Magnesium	1440	52.9	159	265	1		SW6010B	0L15010	12/16/10 14:58
7439-96-5	Manganese	103	0.159	0.318	0.794	1	J	SW6010B	0L15010	12/16/10 14:58
7440-02-0	Nickel	11.4	0.159	0.318	0.529	1		SW6010B	0L15010	12/16/10 14:58
7440-09-7	Potassium	337	52.9	159	265	1		SW6010B	0L15010	12/16/10 14:58
7782-49-2	Selenium	0.331	0.159	0.265	0.529	1	J	SW6010B	0L15010	12/16/10 14:58
7440-22-4	Silver		0.106	0.106	0.529	1	M U	SW6010B	0L15010	12/16/10 14:58
7440-23-5	Sodium	62.0	52.9	159	265	1	J	SW6010B	0L15010	12/16/10 14:58
7440-28-0	Thallium		0.159	0.212	0.424	1	U	SW6010B	0L15010	12/16/10 14:58
7440-62-2	Vanadium	3.61	0.265	0.529	0.662	1	J	SW6010B	0L15010	12/16/10 14:58
7440-66-6	Zinc	10.3	1.32	2.65	5.29	5	D	SW6010B	0L15010	12/17/10 18:11

ANALYSIS DATA SHEET

MR17-DUO1-SS02-10D

Laboratory: Empirical Laboratories, LLC

SDG: 1012017

Client: CH2M Hill, Inc.

Project: Lejeune CTO-141 UXO-17

Matrix: Soil

Laboratory ID: 1012017-09

Sampled: 11/30/10 14:25

Received: 12/01/10 08:11

% Solids: 95.48

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0194	0.0132	0.0334	0.0334	1	J	SW7471A	0L10003	12/16/10 13:17
7429-90-5	Aluminum	3410	12.4	24.8	49.6	5	D	SW6010B	0L15010	12/17/10 18:16
7440-36-0	Antimony		0.248	0.397	0.496	1	U	SW6010B	0L15010	12/16/10 15:02
7440-38-2	Arsenic	1.85	0.149	0.298	0.496	1		SW6010B	0L15010	12/16/10 15:02
7440-39-3	Barium	4.32	0.248	0.496	1.99	1		SW6010B	0L15010	12/16/10 15:02
7440-41-7	Beryllium	0.107	0.0496	0.0993	0.248	1	J	SW6010B	0L15010	12/16/10 15:02
7440-43-9	Cadmium	0.353	0.0496	0.0993	0.248	1		SW6010B	0L15010	12/16/10 15:02
7440-70-2	Calcium	78700	248	496	1240	5	D	SW6010B	0L15010	12/17/10 18:16
7440-47-3	Chromium	4.03	0.0993	0.199	0.496	1		SW6010B	0L15010	12/16/10 15:02
7440-48-4	Cobalt	2.33	0.248	0.496	0.620	1		SW6010B	0L15010	12/16/10 15:02
7440-50-8	Copper	1.39	0.199	0.397	0.496	1		SW6010B	0L15010	12/16/10 15:02
7439-89-6	Iron	1940	1.49	2.98	4.96	1		SW6010B	0L15010	12/16/10 15:02
7439-92-1	Lead	2.46	0.372	0.745	0.745	5	D	SW6010B	0L15010	12/17/10 18:16
7439-95-4	Magnesium	1060	49.6	149	248	1		SW6010B	0L15010	12/16/10 15:02
7439-96-5	Manganese	74.0	0.149	0.298	0.745	1	Y	SW6010B	0L15010	12/16/10 15:02
7440-02-0	Nickel	11.1	0.149	0.298	0.496	1		SW6010B	0L15010	12/16/10 15:02
7440-09-7	Potassium	335	49.6	149	248	1		SW6010B	0L15010	12/16/10 15:02
7782-49-2	Selenium	0.289	0.149	0.248	0.496	1	J	SW6010B	0L15010	12/16/10 15:02
7440-22-4	Silver		0.0993	0.0993	0.496	1	M/Y U	SW6010B	0L15010	12/16/10 15:02
7440-23-5	Sodium	60.0	49.6	149	248	1	J	SW6010B	0L15010	12/16/10 15:02
7440-28-0	Thallium		0.149	0.199	0.397	1	U	SW6010B	0L15010	12/16/10 15:02
7440-62-2	Vanadium	5.07	0.248	0.496	0.620	1	X	SW6010B	0L15010	12/16/10 15:02
7440-66-6	Zinc	8.92	1.24	2.48	4.96	5	D	SW6010B	0L15010	12/17/10 18:16

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2/11/2011

ANALYSIS DATA SHEET

MR17-DUO1-SS03-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012017Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012017-10Sampled: 11/30/10 14:30Received: 12/01/10 08:11% Solids: 96.10

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0247	0.0113	0.0286	0.0330	1	J	SW7471A	0L10003	12/16/10 13:19
7429-90-5	Aluminum	2860	64.1	128	256	25	D	SW6010B	0L15010	12/17/10 18:20
7440-36-0	Antimony		6.41	10.3	12.8	25	U	SW6010B	0L15010	12/17/10 18:20
7440-38-2	Arsenic		3.84	7.69	12.8	25	U	SW6010B	0L15010	12/17/10 18:20
7440-39-3	Barium		6.41	12.8	51.3	25	U	SW6010B	0L15010	12/17/10 18:20
7440-41-7	Beryllium		1.28	2.56	6.41	25	U	SW6010B	0L15010	12/17/10 18:20
7440-43-9	Cadmium	1.50	1.28	2.56	6.41	25	J D	SW6010B	0L15010	12/17/10 18:20
7440-70-2	Calcium	158000	1280	2560	6410	25	D	SW6010B	0L15010	12/17/10 18:20
7440-47-3	Chromium	5.06	2.56	5.13	12.8	25	J D	SW6010B	0L15010	12/17/10 18:20
7440-48-4	Cobalt		6.41	12.8	16.0	25	U	SW6010B	0L15010	12/17/10 18:20
7440-50-8	Copper		5.13	10.3	12.8	25	U	SW6010B	0L15010	12/17/10 18:20
7439-89-6	Iron	2800	38.4	76.9	128	25	D	SW6010B	0L15010	12/17/10 18:20
7439-92-1	Lead		1.92	3.84	3.84	25	U	SW6010B	0L15010	12/17/10 18:20
7439-95-4	Magnesium	2220	1280	3840	6410	25	J D	SW6010B	0L15010	12/17/10 18:20
7439-96-5	Manganese	186	3.84	7.69	19.2	25	D	SW6010B	0L15010	12/17/10 18:20
7440-02-0	Nickel	16.0	3.84	7.69	12.8	25	D	SW6010B	0L15010	12/17/10 18:20
7440-09-7	Potassium	459	51.3	154	256	1		SW6010B	0L15010	12/16/10 15:07
7782-49-2	Selenium		3.84	6.41	12.8	25	U	SW6010B	0L15010	12/17/10 18:20
7440-22-4	Silver		1.28	2.56	12.8	25	U	SW6010B	0L15010	12/17/10 18:20
7440-23-5	Sodium		1280	3840	6410	25	U	SW6010B	0L15010	12/17/10 18:20
7440-28-0	Thallium		3.84	5.13	10.3	25	U	SW6010B	0L15010	12/17/10 18:20
7440-62-2	Vanadium		6.41	12.8	16.0	25	U	SW6010B	0L15010	12/17/10 18:20
7440-66-6	Zinc	11.2	6.41	12.8	25.6	25	J D	SW6010B	0L15010	12/17/10 18:20

ANALYSIS DATA SHEET

MR17-EB-113010

Laboratory: Empirical Laboratories, LLCSDG: 1012017Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012017-11Sampled: 11/30/10 15:30Received: 12/01/10 08:11% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	0.200	1	U	SW7470A	0L06008	12/08/10 13:29
7429-90-5	Aluminum		12.5	25.0	50.0	1	U	SW6010B	0L08009	12/09/10 17:24
7440-36-0	Antimony		1.25	2.00	2.50	1	U	SW6010B	0L08009	12/09/10 17:24
7440-38-2	Arsenic		0.750	1.50	2.50	1	U	SW6010B	0L08009	12/09/10 17:24
7440-39-3	Barium		1.25	2.50	10.0	1	U	SW6010B	0L08009	12/09/10 17:24
7440-41-7	Beryllium		0.250	0.500	1.25	1	U	SW6010B	0L08009	12/09/10 17:24
7440-43-9	Cadmium		0.250	0.500	1.25	1	U	SW6010B	0L08009	12/09/10 17:24
7440-70-2	Calcium		250	500	1250	1	U	SW6010B	0L08009	12/09/10 17:24
7440-47-3	Chromium		0.500	1.00	2.50	1	U	SW6010B	0L08009	12/09/10 17:24
7440-48-4	Cobalt		1.25	2.50	3.12	1	U	SW6010B	0L08009	12/09/10 17:24
7440-50-8	Copper		1.00	2.00	2.50	1	U	SW6010B	0L08009	12/09/10 17:24
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010B	0L08009	12/09/10 17:24
7439-92-1	Lead		0.375	0.750	0.750	1	U	SW6010B	0L08009	12/09/10 17:24
7439-95-4	Magnesium		250	750	1250	1	U	SW6010B	0L08009	12/09/10 17:24
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010B	0L08009	12/09/10 17:24
7440-02-0	Nickel		0.750	1.50	2.50	1	U	SW6010B	0L08009	12/09/10 17:24
7440-09-7	Potassium		250	750	1250	1	U	SW6010B	0L08009	12/09/10 17:24
7782-49-2	Selenium		0.750	1.25	2.50	1	U	SW6010B	0L08009	12/09/10 17:24
7440-22-4	Silver		0.250	0.500	2.50	1	U	SW6010B	0L08009	12/09/10 17:24
7440-23-5	Sodium		250	750	1250	1	U	SW6010B	0L08009	12/09/10 17:24
7440-28-0	Thallium		0.750	1.00	2.00	1	U	SW6010B	0L08009	12/09/10 17:24
7440-62-2	Vanadium		1.25	2.50	3.12	1	U	SW6010B	0L08009	12/09/10 17:24
7440-66-6	Zinc		1.25	2.50	5.00	1	U	SW6010B	0L08009	12/09/10 17:24

SMK
2/11/11

Project: MCB Camp Lejeune (CTO-141), Jacksonville, NC
Laboratory: Empirical Laboratories, LLC
Sample Delivery Group: 1012036
Fraction: Inorganic
Matrix: Solid
Report Date: 2/22/2011

This analytical quality assurance report is based upon a review of analytical data generated for soil samples. Four equipment blanks, two field duplicate samples, and one matrix spike/matrix spike duplicate were submitted with the samples in this SDG. The sample locations, laboratory identification numbers, sample collection date, sample matrix, and analyses performed are presented in Table 1.

The samples were analyzed for metals. The sample analyses were performed in accordance with the procedures outlined in the method referenced at the end of this report.

All sample analyses have undergone an analytical quality assurance review to ensure adherence to the required protocols. Results have been validated or qualified according to general guidance provided in the "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", OSWER 9240.1-45 EPA 540-R-04-004, October 2004 and "Data Validation Standard Operating Procedures for Contract Laboratory Program Routine Analytical Services", USEPA Region IV, Revision 2.1, July 1999.

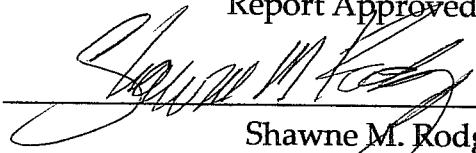
These documents specify procedures for validating data generated for CLP analyses. Therefore, the quality control requirements specified in the methods and associated acceptance criteria were also used to evaluate the non-CLP data. The parameters presented on the following page were evaluated.

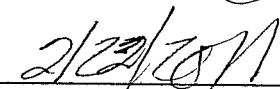
- X • Data Completeness
- X • Chain of Custody Documentation
- X • Holding Times
- X • Initial and Continuing Calibrations
- X • ICP Interference Check Sample Results
- X • Laboratory and Field Blank Analysis Results
- X • Matrix Spike Recoveries and Reproducibility
- X • Laboratory Duplicate Analysis Results
- X • ICP Serial Dilution Results
- X • Field Duplicate Analysis Results
- X • Laboratory Control Sample Results
 - GFAA Post-Digestion Spike Recovery/Duplicate Burn Precision
- X • Qualitative Identification
- X • Quantitation/Reporting Limits

X - Denotes parameter evaluated.

It is recommended that the data only be used according to the qualifiers presented, and discussed in this report. All other data should be considered qualitatively and quantitatively valid as reported by the laboratory, based on the items evaluated.

Report Approved By:


Shawne M. Rodgers
President


Date

1.0 DATA COMPLETENESS

The data package was complete.

2.0 CHAIN OF CUSTODY DOCUMENTATION

The chain of custody (COC) documentation was complete.

3.0 HOLDING TIMES

All criteria were met. No qualifiers were applied.

4.0 INITIAL AND CONTINUING CALIBRATIONS

All criteria were met. No qualifiers were applied.

5.0 ICP INTERFERENCE CHECK SAMPLE RESULTS

All criteria were met. No qualifiers were applied.

6.0 LABORATORY AND FIELD BLANK ANALYSIS RESULTS

The following positive results are considered to be nondetect due to the presence of these analytes in the associated continuing calibration blanks and/or preparation blanks presented in Table 2. The analytes were detected in the associated continuing calibration blanks and/or preparation blanks at levels less than the reporting limit (RL), indicating the possibility of a false positive at this level.

Affected sample results less than the limit of detection (LOD) were replaced by this numeric value and marked "U". Sample results greater than the LOD, but less than the RL, were marked "U".

Analyte	Affected Samples
Cadmium	MR17-IS09-3-5-10D, MR17-IS10-3-5-10D, MR17-SS09-10D, MR17-SS04-10D, MR17-SS05-10D, MR17-SS02-10D, MR17-SS01-10D, MR17-SS03-10D, MR17-IS11-4-6-10D, MR17-IS12-5-7-10D, MR17-SS12-10D, MR17-SS13-10D, MR17-SS16-10D, MR17-SS15-10D, MR17-SS14-10D, MR17-SS18-10D, MR17-SS17-10D, MR17-SS19-10D, MR17-SS10-10D
Selenium	MR17-SS19-10D, MR17-SS10-10D, MR17-IS15-1-3-10D

7.0

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND REPRODUCIBILITY

The nondetected results for antimony for samples MR17-SS02-10D, MR17-SS01-10D, MR17-SS03-10D, MR17-SS07-10D, MR17-IS11-4-6-10D, MR17-IS12-5-7-10D, MR17-SS12-10D, MR17-SS13-10D, MR17-SS16-10D, MR17-SS15-10D, MR17-SS14-10D, MR17-SS18-10D, and MR17-SS17-10D, have been rejected and should be considered suspect. Positive results for this analyte should be considered biased low quantitative estimates. The associated matrix spike/matrix spike recovery was less than 30 percent for this analyte. The poor recovery indicates the presence of severe interferences for samples of similar matrix. The nondetected results have been marked "R" to indicate that they are suspect. Positive results are marked "J-" to indicate that they are biased low.

Positive results for the following samples should be considered biased high quantitative estimates and may be lower than reported. The associated matrix spike recovery was above the acceptance limit for these analytes. The high recoveries indicate the presence of interferences for aluminum for samples of similar matrix. The positive results have been marked "J+" to indicate that they are biased high quantitative estimates.

Analyte	Affected Samples
Calcium	MR17-SS11-10D, MR17-SS11D-10D, MR17-SS08-10D, MR17-SS08D-10D, MR17-SS06-10D, MR17-SS09-10D, MR17-SS04-10D, MR17-SS05-10D
Magnesium	MR17-SS02-10D, MR17-SS01-10D, MR17-SS07-10D, MR17-IS11-4-6-10D, MR17-IS12-5-7-10D, MR17-SS12-10D, MR17-SS13-10D, MR17-SS16-10D, MR17-SS15-10D, MR17-SS14-10D, MR17-SS18-10D, MR17-SS17-10D

Analyte	Affected Samples
Potassium	MR17-SS08-10D, MR17-SS08D-10D, MR17-SS09-10D, MR17-SS05-10D, MR17-SS02-10D, MR17-SS03-10D, MR17-SS07-10D, MR17-IS11-4-6-10D, MR17-IS12-5-7-10D, MR17-SS12-10D, MR17-SS13-10D, MR17-SS16-10D, MR17-SS15-10D, MR17-SS14-10D, MR17-SS18-10D, MR17-SS17-10D

Positive results and RLs reported for the following samples should be considered biased low quantitative estimates, and may be higher than reported. The associated matrix spike recoveries were below the acceptance limits for these analytes. The low recoveries indicate the presence of interferences for samples of similar matrix. Positive results have been marked with “J-” qualifiers to indicate that they are biased low quantitative estimates. RLs are marked “UJ”.

Analyte	Affected Samples
Calcium	MR17-SS02-10D, MR17-SS01-10D, MR17-SS03-10D, MR17-SS07-10D, MR17-IS11-4-6-10D, MR17-IS12-5-7-10D, MR17-SS12-10D, MR17-SS13-10D, MR17-SS14-10D, MR17-SS18-10D, MR17-SS17-10D, MR17-SS15-10D

8.0 ***LABORATORY DUPLICATE RESULTS***

All criteria were met. No qualifiers were applied.

9.0 ***ICP SERIAL DILUTION RESULTS***

The positive results for potassium and sodium should be considered quantitative estimates. The ICP serial dilution criterion was exceeded for these elements. The lack of precision may be due to interferences in samples of similar matrix. The positive results for these metals have been marked with “J” qualifiers to indicate that they are quantitative estimates.

10.0 ***FIELD DUPLICATE RESULTS***

Duplicate samples MR17-SS11-10D and MR17-SS11D-10D, and MR17-SS08-10D and MR17-SS08D-10D were submitted to the laboratory evaluate sampling and analytical precision for those analytes determined to be present. Results for these duplicate samples are presented in Tables 3 and 4. There are no USEPA-established acceptance criteria for field

duplicate samples. EDQ uses internal an acceptance criterion of 40 percent for values greater than five times the reporting limit (RL) (or \pm twice the RL for results less than five times the RL).

11.0 *LABORATORY CONTROL SAMPLE RESULTS*

All criteria were met. No qualifiers were applied.

12.0 *GFAA POST-DIGESTION SPIKE/DUPLICATE BURN*

This parameter is not applicable to the analyses completed.

13.0 *QUALITATIVE IDENTIFICATION*

All criteria were met. No qualifiers were applied.

14.0 *QUANTITATION/REPORTING LIMITS*

As required by USEPA protocol, all analytes, which were qualitatively identified at concentrations below their respective RLs, have been marked with "J" qualifiers to indicate that they are quantitative estimates.

METHODOLOGY REFERENCES

Analysis	Reference
Metals (Except Mercury)	Method 6010B, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997
Mercury	Method 7471A, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997

Table 1 Samples For Data Validation Review
MCB Camp Lejeune, North Carolina (CTO-141)

SAMPLE ID.	LABORATORY ID	SDG	DATE COLLECTED	ANALYSES PERFORMED		6010B	6850	8330	6010B	7470A	7471A
				MATRIX	Total Of SDG						
Sample Name	Lab_Sample_ID	SDG	DateTime_Collected								
MR17-SS11-10D	1012036-01	1012036	12/01/2010 09:15	Soil		X	X	X	X		X
MR17-SS11D-10D	1012036-02	1012036	12/01/2010 09:20	Soil		X	X	X	X		X
MR17-SS08-10D	1012036-03	1012036	12/01/2010 09:30	Soil		X	X	X	X		X
MR17-SS08D-10D	1012036-04	1012036	12/01/2010 09:35	Soil		X	X	X	X		X
MR17-SS06-10D	1012036-05	1012036	12/01/2010 12:30	Soil		X	X	X	X		X
MR17-IS09-3-5-10D	1012036-06	1012036	12/01/2010 10:30	Soil		X	X	X	X		X
MR17-IS10-3-5-10D	1012036-07	1012036	12/01/2010 13:35	Soil		X	X	X	X		X
MR17-SS09-10D	1012036-08	1012036	12/01/2010 13:15	Soil		X	X	X	X		X
MR17-SS04-10D	1012036-09	1012036	12/01/2010 13:40	Soil		X	X	X	X		X
MR17-SS05-10D	1012036-10	1012036	12/01/2010 14:00	Soil		X	X	X	X		X
MR17-SS02-10D	1012036-11	1012036	12/01/2010 14:10	Soil		X	X	X	X		X
MR17-SS01-10D	1012036-12	1012036	12/01/2010 14:25	Soil		X	X	X	X		X
MR17-SS03-10D	1012036-13	1012036	12/01/2010 15:05	Soil		X	X	X	X		X
MR17-SS07-10D	1012036-14	1012036	12/01/2010 15:20	Soil		X	X	X	X		X
MR17-EB-120110-SS	1012036-15	1012036	12/01/2010 16:00	Equipment Blank		X	X	X	X	X	
MR17-EB-120110-IS	1012036-16	1012036	12/01/2010 16:05	Equipment Blank		X	X	X	X	X	
MR17-IS11-4-6-10D	1012036-17	1012036	12/02/2010 08:50	Soil		X	X	X	X		X
MR17-SS12-10D	1012036-18	1012036	12/02/2010 10:50	Soil		X	X	X	X		X
MR17-SS13-10D	1012036-19	1012036	12/02/2010 08:30	Soil		X	X	X	X		X
MR17-SS16-10D	1012036-20	1012036	12/02/2010 09:00	Soil		X	X	X	X		X
MR17-SS15-10D	1012036-21	1012036	12/02/2010 09:10	Soil		X	X	X	X		X
MR17-SS14-10D	1012036-22	1012036	12/02/2010 09:25	Soil		X	X	X	X		X
MR17-SS18-10D	1012036-23	1012036	12/02/2010 09:40	Soil		X	X	X	X		X
MR17-SS17-10D	1012036-24	1012036	12/02/2010 09:55	Soil		X	X	X	X		X
MR17-SS19-10D	1012036-25	1012036	12/02/2010 10:10	Soil		X	X	X	X		X
MR17-SS10-10D	1012036-26	1012036	12/02/2010 10:55	Soil		X	X	X	X		X
	1012036-27	1012036	12/02/2010 13:40	Soil		X	X	X	X		X

Table 1 Samples For Data Validation Review
 MCB Camp Lejeune, North Carolina (CTO-141)

SAMPLE I.D.	LABORATORY I.D	SDG	DATE COLLECTED	ANALYSES PERFORMED				
				MATRIX	8330	6850	6010B	7470A 7471A
MR17-EB-120210-SS	1012036-28	1012036	12/01/2010 14:45	Equipment Blank	X	X	X	X
MR17-EB-120210-IS	1012036-29	1012036	12/02/2010 15:00	Equipment Blank	X	X	X	X
MR17-IS15-1-3-10D	1012036-30	1012036	12/02/2010 14:40	Soil	X	X	X	X

Table 2

Blank Results for Inorganic Analyses

<u>BLANK</u>	<u>ANALYTE</u>	<u>CONCENTRATION</u> <u>/UNITS</u>	<u>ASSOC. SAMPLES</u>
0L15010-BLK2	Zinc	0.401 J mg/Kg	MR17-SS11-10D, MR17-SS11D-10D, MR17-SS08-10D, MR17-SS08D-10D, MR17-SS06-10D, MR17-IS09-3-5-10D, MR17-IS10-3-5-10D, MR17-SS09-10D MR17-SS04-10D, MR17-SS05-10D
0L15011-BLK2	Zinc	0.459 J mg/Kg	MR17-SS02-10D, MR17-SS01-10D, MR17-SS03-10D, MR17-SS07-10D, MR17-IS11-4-6-10D, MR17-IS12-5-7-10D, MR17-SS12-10D, MR17-SS13-10D, MR17-SS16-10D, MR17-SS15-10D, MR17-SS14-10D, MR17-SS18-10D MR17-SS17-10D
0L21008-BLK1	Selenium	0.177 J mg/Kg	MR17-SS19-10D, MR17-SS10-10D, MR17-IS15-1-3-10D
	Zinc	0.509 J mg/Kg	
0L35203-CCB6	Cadmium	1.19 J µg/L	MR17-IS10-3-5-10D, MR17-SS09-10D, MR17-SS04-10D, MR17-SS05-10D MR17-SS02-10D, MR17-SS01-10D, MR17-SS03-10D, MR17-SS07-10D, MR17-IS11-4-6-10D, MR17-IS12-5-7-10D, MR17-SS12-10D
0L35203-CCB7	Cadmium	1.05 J µg/L	MR17-SS02-10D, MR17-SS01-10D, MR17-SS03-10D, MR17-SS07-10D, MR17-IS11-4-6-10D, MR17-IS12-5-7-10D, MR17-SS12-10D MR17-SS13-10D, MR17-SS16-10D, MR17-SS15-10D, MR17-SS14-10D, MR17-SS18-10D, MR17-SS17-10D
0L35203-CCB8	Cadmium	1.2 J µg/L	MR17-SS13-10D, MR17-SS16-10D, MR17-SS15-10D, MR17-SS14-10D, MR17-SS18-10D, MR17-SS17-10D

ANALYSIS DATA SHEET

MR17-SS11-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-01Sampled: 12/01/10 09:15Received: 12/03/10 08:30% Solids: 89.70

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0150	0.0136	0.0345	0.0345	1	J	SW7471A	0L10003	12/16/10 13:20
7429-90-5	Aluminum	165	2.77	5.55	11.1	1		SW6010B	0L15010	12/16/10 15:29
7440-36-0	Antimony		0.277	0.444	0.555	1	U	SW6010B	0L15010	12/16/10 15:29
7440-38-2	Arsenic		0.166	0.333	0.555	1	U	SW6010B	0L15010	12/16/10 15:29
7440-39-3	Barium	1.08	0.277	0.555	2.22	1	J	SW6010B	0L15010	12/16/10 15:29
7440-41-7	Beryllium		0.0555	0.111	0.277	1	U	SW6010B	0L15010	12/16/10 15:29
7440-43-9	Cadmium	0.0858	0.0555	0.111	0.277	1	J	SW6010B	0L15010	12/16/10 15:29
7440-70-2	Calcium	133	55.5	111	277	1	J <i>HT</i>	SW6010B	0L15010	12/17/10 18:57
7440-47-3	Chromium	0.512	0.111	0.222	0.555	1	J	SW6010B	0L15010	12/16/10 15:29
7440-48-4	Cobalt		0.277	0.555	0.693	1	U	SW6010B	0L15010	12/16/10 15:29
7440-50-8	Copper	1.18	0.222	0.444	0.555	1		SW6010B	0L15010	12/16/10 15:29
7439-89-6	Iron	117	1.66	3.33	5.55	1		SW6010B	0L15010	12/16/10 15:29
7439-92-1	Lead	2.69	0.0832	0.166	0.166	1		SW6010B	0L15010	12/16/10 15:29
7439-95-4	Magnesium		55.5	166	277	1	U	SW6010B	0L15010	12/16/10 15:29
7439-96-5	Manganese	2.71	0.166	0.333	0.832	1		SW6010B	0L15010	12/17/10 18:57
7440-02-0	Nickel		0.166	0.333	0.555	1	U	SW6010B	0L15010	12/16/10 15:29
7440-09-7	Potassium		55.5	166	277	1	U <i>N</i>	SW6010B	0L15010	12/17/10 18:57
7782-49-2	Selenium	0.189	0.166	0.277	0.555	1	J	SW6010B	0L15010	12/16/10 15:29
7440-22-4	Silver		0.0555	0.111	0.555	1	U	SW6010B	0L15010	12/17/10 18:57
7440-23-5	Sodium		55.5	166	277	1	U	SW6010B	0L15010	12/16/10 15:29
7440-28-0	Thallium		0.166	0.222	0.444	1	U	SW6010B	0L15010	12/16/10 15:29
7440-62-2	Vanadium	0.876	0.277	0.555	0.693	1		SW6010B	0L15010	12/17/10 18:57
7440-66-6	Zinc	1.64	0.277	0.555	1.11	1		SW6010B	0L15010	12/16/10 15:29

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ANALYSIS DATA SHEET

MR17-SS11D-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-02Sampled: 12/01/10 09:20Received: 12/03/10 08:30% Solids: 90.48

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0138	0.0135	0.0342	0.0342	1	J	SW7471A	0L10003	12/16/10 13:22
7429-90-5	Aluminum	147	2.70	5.39	10.8	1		SW6010B	0L15010	12/16/10 15:34
7440-36-0	Antimony		0.270	0.431	0.539	1	U	SW6010B	0L15010	12/16/10 15:34
7440-38-2	Arsenic		0.162	0.323	0.539	1	U	SW6010B	0L15010	12/16/10 15:34
7440-39-3	Barium	1.02	0.270	0.539	2.16	1	J	SW6010B	0L15010	12/16/10 15:34
7440-41-7	Beryllium		0.0539	0.108	0.270	1	U	SW6010B	0L15010	12/16/10 15:34
7440-43-9	Cadmium	0.0923	0.0539	0.108	0.270	1	J	SW6010B	0L15010	12/16/10 15:34
7440-70-2	Calcium	102	53.9	108	270	1	NJ	SW6010B	0L15010	12/17/10 19:02
7440-47-3	Chromium	0.506	0.108	0.216	0.539	1	J	SW6010B	0L15010	12/16/10 15:34
7440-48-4	Cobalt		0.270	0.539	0.674	1	U	SW6010B	0L15010	12/16/10 15:34
7440-50-8	Copper	1.00	0.216	0.431	0.539	1		SW6010B	0L15010	12/16/10 15:34
7439-89-6	Iron	108	1.62	3.23	5.39	1		SW6010B	0L15010	12/16/10 15:34
7439-92-1	Lead	2.47	0.0809	0.162	0.162	1		SW6010B	0L15010	12/16/10 15:34
7439-95-4	Magnesium		53.9	162	270	1	U	SW6010B	0L15010	12/16/10 15:34
7439-96-5	Manganese	2.26	0.162	0.323	0.809	1		SW6010B	0L15010	12/17/10 19:02
7440-02-0	Nickel		0.162	0.323	0.539	1	U	SW6010B	0L15010	12/16/10 15:34
7440-09-7	Potassium		53.9	162	270	1	U	SW6010B	0L15010	12/17/10 19:02
7782-49-2	Selenium		0.162	0.270	0.539	1	U	SW6010B	0L15010	12/16/10 15:34
7440-22-4	Silver		0.0539	0.108	0.539	1	U	SW6010B	0L15010	12/17/10 19:02
7440-23-5	Sodium		53.9	162	270	1	U	SW6010B	0L15010	12/16/10 15:34
7440-28-0	Thallium		0.162	0.216	0.431	1	U	SW6010B	0L15010	12/16/10 15:34
7440-62-2	Vanadium	0.842	0.270	0.539	0.674	1		SW6010B	0L15010	12/17/10 19:02
7440-66-6	Zinc	1.40	0.270	0.539	1.08	1		SW6010B	0L15010	12/16/10 15:34

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ANALYSIS DATA SHEET

MR17-SS08-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-03Sampled: 12/01/10 09:30Received: 12/03/10 08:30% Solids: 82.68

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0172	0.0139	0.0352	0.0352	1	J	SW7471A	0L10003	12/16/10 13:24
7429-90-5	Aluminum	490	3.04	6.08	12.2	1		SW6010B	0L15010	12/16/10 15:38
7440-36-0	Antimony		0.304	0.486	0.608	1	U	SW6010B	0L15010	12/16/10 15:38
7440-38-2	Arsenic		0.182	0.365	0.608	1	U	SW6010B	0L15010	12/16/10 15:38
7440-39-3	Barium	3.05	0.304	0.608	2.43	1		SW6010B	0L15010	12/16/10 15:38
7440-41-7	Beryllium		0.0608	0.122	0.304	1	U	SW6010B	0L15010	12/16/10 15:38
7440-43-9	Cadmium	0.104	0.0608	0.122	0.304	1	J	SW6010B	0L15010	12/16/10 15:38
7440-70-2	Calcium	305	60.8	122	304	1	XJT	SW6010B	0L15010	12/17/10 19:06
7440-47-3	Chromium	0.973	0.122	0.243	0.608	1		SW6010B	0L15010	12/16/10 15:38
7440-48-4	Cobalt		0.304	0.608	0.760	1	U	SW6010B	0L15010	12/16/10 15:38
7440-50-8	Copper	0.505	0.243	0.486	0.608	1	J	SW6010B	0L15010	12/16/10 15:38
7439-89-6	Iron	271	1.82	3.65	6.08	1		SW6010B	0L15010	12/16/10 15:38
7439-92-1	Lead	3.10	0.0912	0.182	0.182	1		SW6010B	0L15010	12/16/10 15:38
7439-95-4	Magnesium		60.8	182	304	1	U	SW6010B	0L15010	12/16/10 15:38
7439-96-5	Manganese	2.69	0.182	0.365	0.912	1		SW6010B	0L15010	12/17/10 19:06
7440-02-0	Nickel		0.182	0.365	0.608	1	U	SW6010B	0L15010	12/16/10 15:38
7440-09-7	Potassium	72.3	60.8	182	304	1	XJT	SW6010B	0L15010	12/17/10 19:06
7782-49-2	Selenium	0.208	0.182	0.304	0.608	1	J	SW6010B	0L15010	12/16/10 15:38
7440-22-4	Silver		0.0608	0.122	0.608	1	U	SW6010B	0L15010	12/17/10 19:06
7440-23-5	Sodium		60.8	182	304	1	U	SW6010B	0L15010	12/16/10 15:38
7440-28-0	Thallium		0.182	0.243	0.486	1	U	SW6010B	0L15010	12/16/10 15:38
7440-62-2	Vanadium	1.87	0.304	0.608	0.760	1		SW6010B	0L15010	12/17/10 19:06
7440-66-6	Zinc	1.75	0.304	0.608	1.22	1		SW6010B	0L15010	12/16/10 15:38

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ANALYSIS DATA SHEET

MR17-SS08D-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-04Sampled: 12/01/10 09:35Received: 12/03/10 08:30% Solids: 79.26

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0302	0.0141	0.0357	0.0357	1	J	SW7471A	0L10003	12/16/10 13:29
7429-90-5	Aluminum	457	3.22	6.44	12.9	1		SW6010B	0L15010	12/16/10 15:43
7440-36-0	Antimony		0.322	0.515	0.644	1	U	SW6010B	0L15010	12/16/10 15:43
7440-38-2	Arsenic	0.211	0.193	0.386	0.644	1	J	SW6010B	0L15010	12/16/10 15:43
7440-39-3	Barium	7.57	0.322	0.644	2.57	1		SW6010B	0L15010	12/16/10 15:43
7440-41-7	Beryllium		0.0644	0.129	0.322	1	U	SW6010B	0L15010	12/16/10 15:43
7440-43-9	Cadmium	0.133	0.0644	0.129	0.322	1	J	SW6010B	0L15010	12/16/10 15:43
7440-70-2	Calcium	787	64.4	129	322	1	J	SW6010B	0L15010	12/17/10 19:11
7440-47-3	Chromium	0.940	0.129	0.257	0.644	1		SW6010B	0L15010	12/16/10 15:43
7440-48-4	Cobalt		0.322	0.644	0.805	1	U	SW6010B	0L15010	12/16/10 15:43
7440-50-8	Copper	1.20	0.257	0.515	0.644	1		SW6010B	0L15010	12/16/10 15:43
7439-89-6	Iron	266	1.93	3.86	6.44	1		SW6010B	0L15010	12/16/10 15:43
7439-92-1	Lead	6.13	0.0966	0.193	0.193	1		SW6010B	0L15010	12/16/10 15:43
7439-95-4	Magnesium	66.1	64.4	193	322	1	J	SW6010B	0L15010	12/16/10 15:43
7439-96-5	Manganese	4.87	0.193	0.386	0.966	1		SW6010B	0L15010	12/17/10 19:11
7440-02-0	Nickel	0.309	0.193	0.386	0.644	1	J	SW6010B	0L15010	12/16/10 15:43
7440-09-7	Potassium	82.5	64.4	193	322	1	J	SW6010B	0L15010	12/17/10 19:11
7782-49-2	Selenium	0.339	0.193	0.322	0.644	1	J	SW6010B	0L15010	12/16/10 15:43
7440-22-4	Silver		0.0644	0.129	0.644	1	U	SW6010B	0L15010	12/17/10 19:11
7440-23-5	Sodium		64.4	193	322	1	U	SW6010B	0L15010	12/16/10 15:43
7440-28-0	Thallium		0.193	0.257	0.515	1	U	SW6010B	0L15010	12/16/10 15:43
7440-62-2	Vanadium	1.57	0.322	0.644	0.805	1		SW6010B	0L15010	12/17/10 19:11
7440-66-6	Zinc	2.77	0.322	0.644	1.29	1		SW6010B	0L15010	12/16/10 15:43

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ANALYSIS DATA SHEET

MR17-SS06-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-05Sampled: 12/01/10 12:30Received: 12/03/10 08:30% Solids: 85.75

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0348	0.0157	0.0398	0.0398	1	J	SW7471A	0L10003	12/16/10 13:31
7429-90-5	Aluminum	322	2.92	5.83	11.7	1		SW6010B	0L15010	12/16/10 15:48
7440-36-0	Antimony		0.292	0.466	0.583	1	U	SW6010B	0L15010	12/16/10 15:48
7440-38-2	Arsenic	0.236	0.175	0.350	0.583	1	J	SW6010B	0L15010	12/16/10 15:48
7440-39-3	Barium	8.57	0.292	0.583	2.33	1		SW6010B	0L15010	12/16/10 15:48
7440-41-7	Beryllium		0.0583	0.117	0.292	1	U	SW6010B	0L15010	12/16/10 15:48
7440-43-9	Cadmium	0.112	0.0583	0.117	0.292	1	J	SW6010B	0L15010	12/16/10 15:48
7440-70-2	Calcium	460	58.3	117	292	1	U	SW6010B	0L15010	12/17/10 19:16
7440-47-3	Chromium	0.641	0.117	0.233	0.583	1		SW6010B	0L15010	12/16/10 15:48
7440-48-4	Cobalt		0.292	0.583	0.729	1	U	SW6010B	0L15010	12/16/10 15:48
7440-50-8	Copper	1.35	0.233	0.466	0.583	1		SW6010B	0L15010	12/16/10 15:48
7439-89-6	Iron	227	1.75	3.50	5.83	1		SW6010B	0L15010	12/16/10 15:48
7439-92-1	Lead	12.2	0.0875	0.175	0.175	1		SW6010B	0L15010	12/16/10 15:48
7439-95-4	Magnesium		58.3	175	292	1	U	SW6010B	0L15010	12/16/10 15:48
7439-96-5	Manganese	2.82	0.175	0.350	0.875	1		SW6010B	0L15010	12/17/10 19:16
7440-02-0	Nickel	0.216	0.175	0.350	0.583	1	J	SW6010B	0L15010	12/16/10 15:48
7440-09-7	Potassium		58.3	175	292	1	U	SW6010B	0L15010	12/17/10 19:16
7782-49-2	Selenium	0.301	0.175	0.292	0.583	1	J	SW6010B	0L15010	12/16/10 15:48
7440-22-4	Silver		0.0583	0.117	0.583	1	U	SW6010B	0L15010	12/17/10 19:16
7440-23-5	Sodium		58.3	175	292	1	U	SW6010B	0L15010	12/16/10 15:48
7440-28-0	Thallium		0.175	0.233	0.466	1	U	SW6010B	0L15010	12/16/10 15:48
7440-62-2	Vanadium	1.23	0.292	0.583	0.729	1		SW6010B	0L15010	12/17/10 19:16
7440-66-6	Zinc	1.70	0.292	0.583	1.17	1		SW6010B	0L15010	12/16/10 15:48

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ANALYSIS DATA SHEET

MR17-IS09-3-5-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-06Sampled: 12/01/10 10:30Received: 12/03/10 08:30% Solids: 90.18

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0135	0.0343	0.0343	1	U	SW7471A	0L10003	12/16/10 13:36
7429-90-5	Aluminum	4500	2.83	5.66	11.3	1		SW6010B	0L15010	12/16/10 16:11
7440-36-0	Antimony		0.283	0.453	0.566	1	U	SW6010B	0L15010	12/16/10 16:11
7440-38-2	Arsenic	0.599	0.170	0.339	0.566	1		SW6010B	0L15010	12/16/10 16:11
7440-39-3	Barium	2.43	0.283	0.566	2.26	1		SW6010B	0L15010	12/16/10 16:11
7440-41-7	Beryllium		0.0566	0.113	0.283	1	U	SW6010B	0L15010	12/16/10 16:11
7440-43-9	Cadmium	0.106	0.0566	0.113	0.283	1	J	SW6010B	0L15010	12/16/10 16:11
7440-70-2	Calcium		56.6	113	283	1	U	SW6010B	0L15010	12/17/10 19:39
7440-47-3	Chromium	3.34	0.113	0.226	0.566	1		SW6010B	0L15010	12/16/10 16:11
7440-48-4	Cobalt		0.283	0.566	0.707	1	U	SW6010B	0L15010	12/16/10 16:11
7440-50-8	Copper	0.299	0.226	0.453	0.566	1	J	SW6010B	0L15010	12/16/10 16:11
7439-89-6	Iron	1740	1.70	3.39	5.66	1		SW6010B	0L15010	12/16/10 16:11
7439-92-1	Lead	3.84	0.0849	0.170	0.170	1		SW6010B	0L15010	12/16/10 16:11
7439-95-4	Magnesium		56.6	170	283	1	U	SW6010B	0L15010	12/16/10 16:11
7439-96-5	Manganese	1.27	0.170	0.339	0.849	1		SW6010B	0L15010	12/17/10 19:39
7440-02-0	Nickel	1.03	0.170	0.339	0.566	1		SW6010B	0L15010	12/16/10 16:11
7440-09-7	Potassium		56.6	170	283	1	U	SW6010B	0L15010	12/17/10 19:39
7782-49-2	Selenium	0.235	0.170	0.283	0.566	1	J	SW6010B	0L15010	12/16/10 16:11
7440-22-4	Silver		0.0566	0.113	0.566	1	U	SW6010B	0L15010	12/17/10 19:39
7440-23-5	Sodium		56.6	170	283	1	U	SW6010B	0L15010	12/16/10 16:11
7440-28-0	Thallium		0.170	0.226	0.453	1	U	SW6010B	0L15010	12/16/10 16:11
7440-62-2	Vanadium	4.56	0.283	0.566	0.707	1		SW6010B	0L15010	12/17/10 19:39
7440-66-6	Zinc	0.873	0.283	0.566	1.13	1	J	SW6010B	0L15010	12/16/10 16:11

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ANALYSIS DATA SHEET

MR17-IS10-3-5-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-07Sampled: 12/01/10 13:35Received: 12/03/10 08:30% Solids: 90.07

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0261	0.0127	0.0323	0.0330	1	J	SW7471A	0L10003	12/16/10 13:38
7429-90-5	Aluminum	3100	2.75	5.50	11.0	1		SW6010B	0L15010	12/16/10 16:15
7440-36-0	Antimony		0.275	0.440	0.550	1	U	SW6010B	0L15010	12/16/10 16:15
7440-38-2	Arsenic		0.165	0.330	0.550	1	U	SW6010B	0L15010	12/16/10 16:15
7440-39-3	Barium	3.41	0.275	0.550	2.20	1		SW6010B	0L15010	12/16/10 16:15
7440-41-7	Beryllium		0.0550	0.110	0.275	1	U	SW6010B	0L15010	12/16/10 16:15
7440-43-9	Cadmium	0.110 0.108	0.0550	0.110	0.275	1	U	SW6010B	0L15010	12/16/10 16:15
7440-70-2	Calcium		55.0	110	275	1	U	SW6010B	0L15010	12/17/10 19:44
7440-47-3	Chromium	2.50	0.110	0.220	0.550	1		SW6010B	0L15010	12/16/10 16:15
7440-48-4	Cobalt		0.275	0.550	0.687	1	U	SW6010B	0L15010	12/16/10 16:15
7440-50-8	Copper	0.444	0.220	0.440	0.550	1	J	SW6010B	0L15010	12/16/10 16:15
7439-89-6	Iron	215	1.65	3.30	5.50	1		SW6010B	0L15010	12/16/10 16:15
7439-92-1	Lead	3.31	0.0824	0.165	0.165	1		SW6010B	0L15010	12/16/10 16:15
7439-95-4	Magnesium		55.0	165	275	1	U	SW6010B	0L15010	12/16/10 16:15
7439-96-5	Manganese	0.956	0.165	0.330	0.824	1		SW6010B	0L15010	12/17/10 19:44
7440-02-0	Nickel	0.551	0.165	0.330	0.550	1		SW6010B	0L15010	12/16/10 16:15
7440-09-7	Potassium		55.0	165	275	1	U	SW6010B	0L15010	12/17/10 19:44
7782-49-2	Selenium	0.328	0.165	0.275	0.550	1	J	SW6010B	0L15010	12/16/10 16:15
7440-22-4	Silver		0.0550	0.110	0.550	1	U	SW6010B	0L15010	12/17/10 19:44
7440-23-5	Sodium		55.0	165	275	1	U	SW6010B	0L15010	12/16/10 16:15
7440-28-0	Thallium		0.165	0.220	0.440	1	U	SW6010B	0L15010	12/16/10 16:15
7440-62-2	Vanadium	2.55	0.275	0.550	0.687	1		SW6010B	0L15010	12/17/10 19:44
7440-66-6	Zinc	1.36	0.275	0.550	1.10	1		SW6010B	0L15010	12/16/10 16:15

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ANALYSIS DATA SHEET

MR17-SS09-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-08Sampled: 12/01/10 13:15Received: 12/03/10 08:30% Solids: 92.15

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0175	0.0137	0.0347	0.0347	1	J	SW7471A	0L10003	12/16/10 13:40
7429-90-5	Aluminum	4240	2.67	5.35	10.7	1		SW6010B	0L15010	12/16/10 16:20
7440-36-0	Antimony		0.267	0.428	0.535	1	U	SW6010B	0L15010	12/16/10 16:20
7440-38-2	Arsenic	0.791	0.160	0.321	0.535	1		SW6010B	0L15010	12/16/10 16:20
7440-39-3	Barium	6.42	0.267	0.535	2.14	1		SW6010B	0L15010	12/16/10 16:20
7440-41-7	Beryllium	0.0730	0.0535	0.107	0.267	1	J	SW6010B	0L15010	12/16/10 16:20
7440-43-9	Cadmium	0.107	0.0535	0.107	0.267	1	U	SW6010B	0L15010	12/16/10 16:20
7440-70-2	Calcium	108	53.5	107	267	1	J	SW6010B	0L15010	12/17/10 19:48
7440-47-3	Chromium	4.88	0.107	0.214	0.535	1		SW6010B	0L15010	12/16/10 16:20
7440-48-4	Cobalt		0.267	0.535	0.668	1	U	SW6010B	0L15010	12/16/10 16:20
7440-50-8	Copper	0.447	0.214	0.428	0.535	1	J	SW6010B	0L15010	12/16/10 16:20
7439-89-6	Iron	1750	1.60	3.21	5.35	1		SW6010B	0L15010	12/16/10 16:20
7439-92-1	Lead	3.74	0.0802	0.160	0.160	1		SW6010B	0L15010	12/16/10 16:20
7439-95-4	Magnesium	111	53.5	160	267	1	J	SW6010B	0L15010	12/16/10 16:20
7439-96-5	Manganese	2.71	0.160	0.321	0.802	1		SW6010B	0L15010	12/17/10 19:48
7440-02-0	Nickel	0.549	0.160	0.321	0.535	1		SW6010B	0L15010	12/16/10 16:20
7440-09-7	Potassium	182	53.5	160	267	1	J	SW6010B	0L15010	12/17/10 19:48
7782-49-2	Selenium	0.268	0.160	0.267	0.535	1	J	SW6010B	0L15010	12/16/10 16:20
7440-22-4	Silver		0.0535	0.107	0.535	1	U	SW6010B	0L15010	12/17/10 19:48
7440-23-5	Sodium		53.5	160	267	1	U	SW6010B	0L15010	12/16/10 16:20
7440-28-0	Thallium		0.160	0.214	0.428	1	U	SW6010B	0L15010	12/16/10 16:20
7440-62-2	Vanadium	6.78	0.267	0.535	0.668	1		SW6010B	0L15010	12/17/10 19:48
7440-66-6	Zinc	1.90	0.267	0.535	1.07	1		SW6010B	0L15010	12/16/10 16:20

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ANALYSIS DATA SHEET

MR17-SS04-10D

Laboratory: Empirical Laboratories, LLC

SDG: 1012036

Client: CH2M Hill, Inc.

Project: Lejeune CTO-141 UXO-17

Matrix: Solid

Laboratory ID: 1012036-09

Sampled: 12/01/10 13:40

Received: 12/03/10 08:30

% Solids: 92.66

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0128	0.0324	0.0330	1	U	SW7471A	0L10003	12/16/10 13:41
7429-90-5	Aluminum	603	2.78	5.56	11.1	1		SW6010B	0L15010	12/16/10 16:24
7440-36-0	Antimony		0.278	0.445	0.556	1	U	SW6010B	0L15010	12/16/10 16:24
7440-38-2	Arsenic		0.167	0.334	0.556	1	U	SW6010B	0L15010	12/16/10 16:24
7440-39-3	Barium	1.19	0.278	0.556	2.23	1	J	SW6010B	0L15010	12/16/10 16:24
7440-41-7	Beryllium		0.0556	0.111	0.278	1	U	SW6010B	0L15010	12/16/10 16:24
7440-43-9	Cadmium	0.111	0.0556	0.111	0.278	1	U	SW6010B	0L15010	12/16/10 16:24
7440-70-2	Calcium	167	55.6	111	278	1	U	SW6010B	0L15010	12/17/10 19:53
7440-47-3	Chromium	0.730	0.111	0.223	0.556	1		SW6010B	0L15010	12/16/10 16:24
7440-48-4	Cobalt		0.278	0.556	0.695	1	U	SW6010B	0L15010	12/16/10 16:24
7440-50-8	Copper	0.399	0.223	0.445	0.556	1	J	SW6010B	0L15010	12/16/10 16:24
7439-89-6	Iron	166	1.67	3.34	5.56	1		SW6010B	0L15010	12/16/10 16:24
7439-92-1	Lead	2.10	0.0834	0.167	0.167	1		SW6010B	0L15010	12/16/10 16:24
7439-95-4	Magnesium		55.6	167	278	1	U	SW6010B	0L15010	12/16/10 16:24
7439-96-5	Manganese	2.82	0.167	0.334	0.834	1		SW6010B	0L15010	12/17/10 19:53
7440-02-0	Nickel		0.167	0.334	0.556	1	U	SW6010B	0L15010	12/16/10 16:24
7440-09-7	Potassium		55.6	167	278	1	U	SW6010B	0L15010	12/17/10 19:53
7782-49-2	Selenium		0.167	0.278	0.556	1	U	SW6010B	0L15010	12/16/10 16:24
7440-22-4	Silver		0.0556	0.111	0.556	1	U	SW6010B	0L15010	12/17/10 19:53
7440-23-5	Sodium		55.6	167	278	1	U	SW6010B	0L15010	12/16/10 16:24
7440-28-0	Thallium		0.167	0.223	0.445	1	U	SW6010B	0L15010	12/16/10 16:24
7440-62-2	Vanadium	0.739	0.278	0.556	0.695	1		SW6010B	0L15010	12/17/10 19:53
7440-66-6	Zinc	1.51	0.278	0.556	1.11	1		SW6010B	0L15010	12/16/10 16:24

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ANALYSIS DATA SHEET

MR17-SS05-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-10Sampled: 12/01/10 14:00Received: 12/03/10 08:30% Solids: 78.41

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0166	0.0421	0.0421	1	U	SW7471A	0L15002	12/16/10 13:52
7429-90-5	Aluminum	2130	3.10	6.19	12.4	1		SW6010B	0L15010	12/16/10 16:29
7440-36-0	Antimony		0.310	0.495	0.619	1	U	SW6010B	0L15010	12/16/10 16:29
7440-38-2	Arsenic	0.271	0.186	0.371	0.619	1	J	SW6010B	0L15010	12/16/10 16:29
7440-39-3	Barium	3.87	0.310	0.619	2.48	1		SW6010B	0L15010	12/16/10 16:29
7440-41-7	Beryllium		0.0619	0.124	0.310	1	U	SW6010B	0L15010	12/16/10 16:29
7440-43-9	Cadmium	0.124	0.117	0.0619	0.124	1	U	SW6010B	0L15010	12/16/10 16:29
7440-70-2	Calcium	389	61.9	124	310	1	X.F.	SW6010B	0L15010	12/17/10 19:57
7440-47-3	Chromium	2.27	0.124	0.248	0.619	1		SW6010B	0L15010	12/16/10 16:29
7440-48-4	Cobalt		0.310	0.619	0.774	1	U	SW6010B	0L15010	12/16/10 16:29
7440-50-8	Copper	0.629	0.248	0.495	0.619	1		SW6010B	0L15010	12/16/10 16:29
7439-89-6	Iron	356	1.86	3.71	6.19	1		SW6010B	0L15010	12/16/10 16:29
7439-92-1	Lead	2.68	0.0929	0.186	0.186	1		SW6010B	0L15010	12/16/10 16:29
7439-95-4	Magnesium	69.4	61.9	186	310	1	J	SW6010B	0L15010	12/16/10 16:29
7439-96-5	Manganese	1.86	0.186	0.371	0.929	1		SW6010B	0L15010	12/17/10 19:57
7440-02-0	Nickel	0.619	0.186	0.371	0.619	1	J	SW6010B	0L15010	12/16/10 16:29
7440-09-7	Potassium	75.0	61.9	186	310	1	X.F.	SW6010B	0L15010	12/17/10 19:57
7782-49-2	Selenium	0.248	0.186	0.310	0.619	1	J	SW6010B	0L15010	12/16/10 16:29
7440-22-4	Silver		0.0619	0.124	0.619	1	U	SW6010B	0L15010	12/17/10 19:57
7440-23-5	Sodium		61.9	186	310	1	U	SW6010B	0L15010	12/16/10 16:29
7440-28-0	Thallium		0.186	0.248	0.495	1	U	SW6010B	0L15010	12/16/10 16:29
7440-62-2	Vanadium	2.43	0.310	0.619	0.774	1		SW6010B	0L15010	12/17/10 19:57
7440-66-6	Zinc	1.98	0.310	0.619	1.24	1		SW6010B	0L15010	12/16/10 16:29

ANALYSIS DATA SHEET

MR17-SS02-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-11Sampled: 12/01/10 14:10Received: 12/03/10 08:30% Solids: 87.17

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0145	0.0136	0.0344	0.0344	1	J	SW7471A	0L15002	12/16/10 13:54
7429-90-5	Aluminum	792	2.94	5.88	11.8	1		SW6010B	0L15011	12/16/10 16:58
7440-36-0	Antimony		0.294	0.471	0.588	1	U	SW6010B	0L15011	12/16/10 16:58
7440-38-2	Arsenic		0.176	0.353	0.588	1	U	SW6010B	0L15011	12/16/10 16:58
7440-39-3	Barium	3.31	0.294	0.588	2.35	1		SW6010B	0L15011	12/16/10 16:58
7440-41-7	Beryllium		0.0588	0.118	0.294	1	U	SW6010B	0L15011	12/16/10 16:58
7440-43-9	Cadmium	0.150	0.0588	0.118	0.294	1	U	SW6010B	0L15011	12/16/10 16:58
7440-70-2	Calcium	2640	58.8	118	294	1	J	SW6010B	0L15011	12/17/10 20:26
7440-47-3	Chromium	1.13	0.118	0.235	0.588	1		SW6010B	0L15011	12/16/10 16:58
7440-48-4	Cobalt		0.294	0.588	0.735	1	U	SW6010B	0L15011	12/16/10 16:58
7440-50-8	Copper	0.920	0.235	0.471	0.588	1		SW6010B	0L15011	12/16/10 16:58
7439-89-6	Iron	422	1.76	3.53	5.88	1		SW6010B	0L15011	12/16/10 16:58
7439-92-1	Lead	3.36	0.0882	0.176	0.176	1		SW6010B	0L15011	12/16/10 16:58
7439-95-4	Magnesium	141	58.8	176	294	1	J	SW6010B	0L15011	12/16/10 16:58
7439-96-5	Manganese	10.6	0.176	0.353	0.882	1		SW6010B	0L15011	12/17/10 20:26
7440-02-0	Nickel	0.757	0.176	0.353	0.588	1		SW6010B	0L15011	12/16/10 16:58
7440-09-7	Potassium	76.5	58.8	176	294	1	J	SW6010B	0L15011	12/17/10 20:26
7782-49-2	Selenium	0.182	0.176	0.294	0.588	1	J	SW6010B	0L15011	12/16/10 16:58
7440-22-4	Silver		0.0588	0.118	0.588	1	U	SW6010B	0L15011	12/17/10 20:26
7440-23-5	Sodium		58.8	176	294	1	U	SW6010B	0L15011	12/16/10 16:58
7440-28-0	Thallium		0.176	0.235	0.471	1	U	SW6010B	0L15011	12/16/10 16:58
7440-62-2	Vanadium	1.49	0.294	0.588	0.735	1		SW6010B	0L15011	12/17/10 20:26
7440-66-6	Zinc	4.99	0.294	0.588	1.18	1		SW6010B	0L15011	12/16/10 16:58

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2/12/011

ANALYSIS DATA SHEET

MR17-SS01-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-12Sampled: 12/01/10 14:25Received: 12/03/10 08:30% Solids: 91.36

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0158	0.0142	0.0361	0.0361	1	J	SW7471A	0L15002	12/16/10 13:56
7429-90-5	Aluminum	995	2.70	5.39	10.8	1		SW6010B	0L15011	12/16/10 17:02
7440-36-0	Antimony		0.270	0.431	0.539	1	UN* R	SW6010B	0L15011	12/16/10 17:02
7440-38-2	Arsenic	0.188	0.162	0.324	0.539	1	J	SW6010B	0L15011	12/16/10 17:02
7440-39-3	Barium	2.05	0.270	0.539	2.16	1	J	SW6010B	0L15011	12/16/10 17:02
7440-41-7	Beryllium		0.0539	0.108	0.270	1	U	SW6010B	0L15011	12/16/10 17:02
7440-43-9	Cadmium	0.115	0.0539	0.108	0.270	1	UN	SW6010B	0L15011	12/16/10 17:02
7440-70-2	Calcium	510	53.9	108	270	1	UN	SW6010B	0L15011	12/17/10 20:30
7440-47-3	Chromium	1.03	0.108	0.216	0.539	1		SW6010B	0L15011	12/16/10 17:02
7440-48-4	Cobalt		0.270	0.539	0.674	1	U	SW6010B	0L15011	12/16/10 17:02
7440-50-8	Copper	0.508	0.216	0.431	0.539	1	J	SW6010B	0L15011	12/16/10 17:02
7439-89-6	Iron	220	1.62	3.24	5.39	1		SW6010B	0L15011	12/16/10 17:02
7439-92-1	Lead	3.04	0.0809	0.162	0.162	1		SW6010B	0L15011	12/16/10 17:02
7439-95-4	Magnesium	62.9	53.9	162	270	1	UN JH	SW6010B	0L15011	12/16/10 17:02
7439-96-5	Manganese	4.27	0.162	0.324	0.809	1		SW6010B	0L15011	12/17/10 20:30
7440-02-0	Nickel	0.261	0.162	0.324	0.539	1	J	SW6010B	0L15011	12/16/10 17:02
7440-09-7	Potassium		53.9	162	270	1	UN	SW6010B	0L15011	12/17/10 20:30
7782-49-2	Selenium	0.267	0.162	0.270	0.539	1	J	SW6010B	0L15011	12/16/10 17:02
7440-22-4	Silver		0.0539	0.108	0.539	1	U	SW6010B	0L15011	12/17/10 20:30
7440-23-5	Sodium		53.9	162	270	1	U	SW6010B	0L15011	12/16/10 17:02
7440-28-0	Thallium		0.162	0.216	0.431	1	U	SW6010B	0L15011	12/16/10 17:02
7440-62-2	Vanadium	1.30	0.270	0.539	0.674	1		SW6010B	0L15011	12/17/10 20:30
7440-66-6	Zinc	1.82	0.270	0.539	1.08	1		SW6010B	0L15011	12/16/10 17:02

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ANALYSIS DATA SHEET

MR17-SS03-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-13Sampled: 12/01/10 15:05Received: 12/03/10 08:30% Solids: 92.68

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0124	0.0314	0.0330	1	U	SW7471A	0L15002	12/16/10 13:57
7429-90-5	Aluminum	119	2.63	5.26	10.5	1		SW6010B	0L15011	12/16/10 17:07
7440-36-0	Antimony		0.263	0.421	0.526	1	U	SW6010B	0L15011	12/16/10 17:07
7440-38-2	Arsenic		0.158	0.316	0.526	1	U	SW6010B	0L15011	12/16/10 17:07
7440-39-3	Barium	0.750	0.263	0.526	2.11	1	J	SW6010B	0L15011	12/16/10 17:07
7440-41-7	Beryllium	0.0555	0.0526	0.105	0.263	1	J	SW6010B	0L15011	12/16/10 17:07
7440-43-9	Cadmium	0.105	0.0526	0.105	0.263	1	U	SW6010B	0L15011	12/16/10 17:07
7440-70-2	Calcium	21800	52.6	105	263	1	U	SW6010B	0L15011	12/17/10 20:35
7440-47-3	Chromium	0.411	0.105	0.211	0.526	1	J	SW6010B	0L15011	12/16/10 17:07
7440-48-4	Cobalt		0.263	0.526	0.658	1	U	SW6010B	0L15011	12/16/10 17:07
7440-50-8	Copper		0.211	0.421	0.526	1	U	SW6010B	0L15011	12/16/10 17:07
7439-89-6	Iron	78.8	1.58	3.16	5.26	1		SW6010B	0L15011	12/16/10 17:07
7439-92-1	Lead	2.06	0.0790	0.158	0.158	1		SW6010B	0L15011	12/16/10 17:07
7439-95-4	Magnesium		52.6	158	263	1	U	SW6010B	0L15011	12/16/10 17:07
7439-96-5	Manganese	40.3	0.158	0.316	0.790	1		SW6010B	0L15011	12/17/10 20:35
7440-02-0	Nickel		0.158	0.316	0.526	1	U	SW6010B	0L15011	12/16/10 17:07
7440-09-7	Potassium	279	52.6	158	263	1	U	SW6010B	0L15011	12/17/10 20:35
7782-49-2	Selenium		0.158	0.263	0.526	1	U	SW6010B	0L15011	12/16/10 17:07
7440-22-4	Silver		0.0526	0.105	0.526	1	U	SW6010B	0L15011	12/17/10 20:35
7440-23-5	Sodium		52.6	158	263	1	U	SW6010B	0L15011	12/16/10 17:07
7440-28-0	Thallium		0.158	0.211	0.421	1	U	SW6010B	0L15011	12/16/10 17:07
7440-62-2	Vanadium	10.3	0.263	0.526	0.658	1		SW6010B	0L15011	12/17/10 20:35
7440-66-6	Zinc	0.611	0.263	0.526	1.05	1	J	SW6010B	0L15011	12/16/10 17:07

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2/12/2011

ANALYSIS DATA SHEET

MR17-SS07-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-14Sampled: 12/01/10 15:20Received: 12/03/10 08:30% Solids: 79.49

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0381	0.0144	0.0366	0.0366	1		SW7471A	0L15002	12/16/10 13:59
7429-90-5	Aluminum	6340	3.11	6.23	12.5	1		SW6010B	0L15011	12/16/10 17:11
7440-36-0	Antimony		0.311	0.498	0.623	1	UN R	SW6010B	0L15011	12/16/10 17:11
7440-38-2	Arsenic	1.93	0.187	0.374	0.623	1		SW6010B	0L15011	12/16/10 17:11
7440-39-3	Barium	15.1	0.311	0.623	2.49	1		SW6010B	0L15011	12/16/10 17:11
7440-41-7	Beryllium	0.204	0.0623	0.125	0.311	1	J	SW6010B	0L15011	12/16/10 17:11
7440-43-9	Cadmium	0.885	0.0623	0.125	0.311	1		SW6010B	0L15011	12/16/10 17:11
7440-70-2	Calcium	26100	62.3	125	311	1	XT	SW6010B	0L15011	12/17/10 20:40
7440-47-3	Chromium	8.73	0.125	0.249	0.623	1		SW6010B	0L15011	12/16/10 17:11
7440-48-4	Cobalt	1.15	0.311	0.623	0.778	1		SW6010B	0L15011	12/16/10 17:11
7440-50-8	Copper	4.74	0.249	0.498	0.623	1		SW6010B	0L15011	12/16/10 17:11
7439-89-6	Iron	3250	1.87	3.74	6.23	1		SW6010B	0L15011	12/16/10 17:11
7439-92-1	Lead	13.5	0.0934	0.187	0.187	1		SW6010B	0L15011	12/16/10 17:11
7439-95-4	Magnesium	478	62.3	187	311	1	XT	SW6010B	0L15011	12/16/10 17:11
7439-96-5	Manganese	48.2	0.187	0.374	0.934	1		SW6010B	0L15011	12/17/10 20:40
7440-02-0	Nickel	2.88	0.187	0.374	0.623	1		SW6010B	0L15011	12/16/10 17:11
7440-09-7	Potassium	330	62.3	187	311	1	XT	SW6010B	0L15011	12/17/10 20:40
7782-49-2	Selenium	1.15	0.187	0.311	0.623	1		SW6010B	0L15011	12/16/10 17:11
7440-22-4	Silver		0.0623	0.125	0.623	1	U	SW6010B	0L15011	12/17/10 20:40
7440-23-5	Sodium		62.3	187	311	1	U	SW6010B	0L15011	12/16/10 17:11
7440-28-0	Thallium		0.249	0.249	0.498	1	U	SW6010B	0L15011	12/16/10 17:11
7440-62-2	Vanadium	12.3	0.311	0.623	0.778	1		SW6010B	0L15011	12/17/10 20:40
7440-66-6	Zinc	34.7	0.311	0.623	1.25	1		SW6010B	0L15011	12/16/10 17:11

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2/12/10

ANALYSIS DATA SHEET

MR17-EB-120110-SS

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012036-15Sampled: 12/01/10 16:00Received: 12/03/10 08:30% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	0.200	1	U	SW7470A	0L17015	12/20/10 11:57
7429-90-5	Aluminum		12.5	25.0	50.0	1	U	SW6010B	0L17003	12/18/10 14:41
7440-36-0	Antimony		1.25	2.00	2.50	1	U	SW6010B	0L17003	12/18/10 14:41
7440-38-2	Arsenic		0.750	1.50	2.50	1	U	SW6010B	0L17003	12/18/10 14:41
7440-39-3	Barium		1.25	2.50	10.0	1	U	SW6010B	0L17003	12/18/10 14:41
7440-41-7	Beryllium		0.250	0.500	1.25	1	U	SW6010B	0L17003	12/18/10 14:41
7440-43-9	Cadmium		0.250	0.500	1.25	1	U	SW6010B	0L17003	12/18/10 14:41
7440-70-2	Calcium		250	500	1250	1	U	SW6010B	0L17003	12/18/10 14:41
7440-47-3	Chromium		0.500	1.00	2.50	1	U	SW6010B	0L17003	12/18/10 14:41
7440-48-4	Cobalt		1.25	2.50	3.12	1	U	SW6010B	0L17003	12/18/10 14:41
7440-50-8	Copper		1.00	2.00	2.50	1	U	SW6010B	0L17003	12/18/10 14:41
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010B	0L17003	12/18/10 14:41
7439-92-1	Lead		0.375	0.750	0.750	1	U	SW6010B	0L17003	12/18/10 14:41
7439-95-4	Magnesium		250	750	1250	1	U	SW6010B	0L17003	12/18/10 14:41
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010B	0L17003	12/18/10 14:41
7440-02-0	Nickel		0.750	1.50	2.50	1	U	SW6010B	0L17003	12/18/10 14:41
7440-09-7	Potassium		250	750	1250	1	U	SW6010B	0L17003	12/18/10 14:41
7782-49-2	Selenium		0.750	1.25	2.50	1	U	SW6010B	0L17003	12/18/10 14:41
7440-22-4	Silver		0.250	0.500	2.50	1	U	SW6010B	0L17003	12/18/10 14:41
7440-23-5	Sodium		250	750	1250	1	U	SW6010B	0L17003	12/18/10 14:41
7440-28-0	Thallium		0.750	1.00	2.00	1	U	SW6010B	0L17003	12/18/10 14:41
7440-62-2	Vanadium		1.25	2.50	3.12	1	U	SW6010B	0L17003	12/18/10 14:41
7440-66-6	Zinc		1.25	2.50	5.00	1	U	SW6010B	0L17003	12/18/10 14:41

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2/12/2011

ANALYSIS DATA SHEET

MR17-EB-120110-IS

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012036-16Sampled: 12/01/10 16:05Received: 12/03/10 08:30% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	0.200	1	U	SW7470A	0L17015	12/20/10 11:59
7429-90-5	Aluminum		12.5	25.0	50.0	1	U	SW6010B	0L17003	12/18/10 14:46
7440-36-0	Antimony		1.25	2.00	2.50	1	U	SW6010B	0L17003	12/18/10 14:46
7440-38-2	Arsenic		0.750	1.50	2.50	1	U	SW6010B	0L17003	12/18/10 14:46
7440-39-3	Barium		1.25	2.50	10.0	1	U	SW6010B	0L17003	12/18/10 14:46
7440-41-7	Beryllium		0.250	0.500	1.25	1	U	SW6010B	0L17003	12/18/10 14:46
7440-43-9	Cadmium		0.250	0.500	1.25	1	U	SW6010B	0L17003	12/18/10 14:46
7440-70-2	Calcium		250	500	1250	1	U	SW6010B	0L17003	12/18/10 14:46
7440-47-3	Chromium		0.500	1.00	2.50	1	U	SW6010B	0L17003	12/18/10 14:46
7440-48-4	Cobalt		1.25	2.50	3.12	1	U	SW6010B	0L17003	12/18/10 14:46
7440-50-8	Copper		1.00	2.00	2.50	1	U	SW6010B	0L17003	12/18/10 14:46
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010B	0L17003	12/18/10 14:46
7439-92-1	Lead		0.375	0.750	0.750	1	U	SW6010B	0L17003	12/18/10 14:46
7439-95-4	Magnesium		250	750	1250	1	U	SW6010B	0L17003	12/18/10 14:46
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010B	0L17003	12/18/10 14:46
7440-02-0	Nickel		0.750	1.50	2.50	1	U	SW6010B	0L17003	12/18/10 14:46
7440-09-7	Potassium		250	750	1250	1	U	SW6010B	0L17003	12/18/10 14:46
7782-49-2	Selenium		0.750	1.25	2.50	1	U	SW6010B	0L17003	12/18/10 14:46
7440-22-4	Silver		0.250	0.500	2.50	1	U	SW6010B	0L17003	12/18/10 14:46
7440-23-5	Sodium		250	750	1250	1	U	SW6010B	0L17003	12/18/10 14:46
7440-28-0	Thallium		0.750	1.00	2.00	1	U	SW6010B	0L17003	12/18/10 14:46
7440-62-2	Vanadium		1.25	2.50	3.12	1	U	SW6010B	0L17003	12/18/10 14:46
7440-66-6	Zinc		1.25	2.50	5.00	1	U	SW6010B	0L17003	12/18/10 14:46

ANALYSIS DATA SHEET

MR17-IS11-4-6-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-17Sampled: 12/02/10 08:50Received: 12/03/10 08:30% Solids: 85.87

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0290	0.0126	0.0320	0.0330	1	J	SW7471A	0L15002	12/16/10 14:01
7429-90-5	Aluminum	5440	2.88	5.76	11.5	1		SW6010B	0L15011	12/16/10 17:16
7440-36-0	Antimony		0.288	0.461	0.576	1	U* R	SW6010B	0L15011	12/16/10 17:16
7440-38-2	Arsenic	0.518	0.173	0.346	0.576	1	J	SW6010B	0L15011	12/16/10 17:16
7440-39-3	Barium	8.60	0.288	0.576	2.31	1		SW6010B	0L15011	12/16/10 17:16
7440-41-7	Beryllium	0.0656	0.0576	0.115	0.288	1	J	SW6010B	0L15011	12/16/10 17:16
7440-43-9	Cadmium	0.115 0.115	0.0576	0.115	0.288	1	U	SW6010B	0L15011	12/16/10 17:16
7440-70-2	Calcium		57.6	115	288	1	U ST	SW6010B	0L15011	12/17/10 20:44
7440-47-3	Chromium	6.35	0.115	0.231	0.576	1		SW6010B	0L15011	12/16/10 17:16
7440-48-4	Cobalt		0.288	0.576	0.721	1	U	SW6010B	0L15011	12/16/10 17:16
7440-50-8	Copper	0.355	0.231	0.461	0.576	1	J	SW6010B	0L15011	12/16/10 17:16
7439-89-6	Iron	827	1.73	3.46	5.76	1		SW6010B	0L15011	12/16/10 17:16
7439-92-1	Lead	4.20	0.0865	0.173	0.173	1		SW6010B	0L15011	12/16/10 17:16
7439-95-4	Magnesium	156	57.6	173	288	1	U ST	SW6010B	0L15011	12/16/10 17:16
7439-96-5	Manganese	2.42	0.173	0.346	0.865	1		SW6010B	0L15011	12/17/10 20:44
7440-02-0	Nickel	0.764	0.173	0.346	0.576	1		SW6010B	0L15011	12/16/10 17:16
7440-09-7	Potassium	132	57.6	173	288	1	U ST	SW6010B	0L15011	12/17/10 20:44
7782-49-2	Selenium		0.173	0.288	0.576	1	U	SW6010B	0L15011	12/16/10 17:16
7440-22-4	Silver		0.0576	0.115	0.576	1	U	SW6010B	0L15011	12/17/10 20:44
7440-23-5	Sodium		57.6	173	288	1	U	SW6010B	0L15011	12/16/10 17:16
7440-28-0	Thallium		0.173	0.231	0.461	1	U	SW6010B	0L15011	12/16/10 17:16
7440-62-2	Vanadium	7.36	0.288	0.576	0.721	1		SW6010B	0L15011	12/17/10 20:44
7440-66-6	Zinc	1.76	0.288	0.576	1.15	1		SW6010B	0L15011	12/16/10 17:16

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ANALYSIS DATA SHEET

MR17-IS12-5-7-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-18Sampled: 12/02/10 10:50Received: 12/03/10 08:30% Solids: 87.08

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0140	0.0355	0.0355	1	U	SW7471A	0L15002	12/16/10 14:02
7429-90-5	Aluminum	5130	2.90	5.80	11.6	1		SW6010B	0L15011	12/16/10 17:21
7440-36-0	Antimony		0.290	0.464	0.580	1	UN*	R SW6010B	0L15011	12/16/10 17:21
7440-38-2	Arsenic	0.419	0.174	0.348	0.580	1	J	SW6010B	0L15011	12/16/10 17:21
7440-39-3	Barium	9.66	0.290	0.580	2.32	1		SW6010B	0L15011	12/16/10 17:21
7440-41-7	Beryllium	0.0743	0.0580	0.116	0.290	1	J	SW6010B	0L15011	12/16/10 17:21
7440-43-9	Cadmium	0.116	0.0580	0.116	0.290	1	UN	SW6010B	0L15011	12/16/10 17:21
7440-70-2	Calcium	300	58.0	116	290	1	UN	SW6010B	0L15011	12/17/10 20:49
7440-47-3	Chromium	4.71	0.116	0.232	0.580	1		SW6010B	0L15011	12/16/10 17:21
7440-48-4	Cobalt	0.454	0.290	0.580	0.725	1	J	SW6010B	0L15011	12/16/10 17:21
7440-50-8	Copper	1.02	0.232	0.464	0.580	1		SW6010B	0L15011	12/16/10 17:21
7439-89-6	Iron	754	1.74	3.48	5.80	1		SW6010B	0L15011	12/16/10 17:21
7439-92-1	Lead	3.64	0.0870	0.174	0.174	1		SW6010B	0L15011	12/16/10 17:21
7439-95-4	Magnesium	210	58.0	174	290	1	UN	SW6010B	0L15011	12/16/10 17:21
7439-96-5	Manganese	5.48	0.174	0.348	0.870	1		SW6010B	0L15011	12/17/10 20:49
7440-02-0	Nickel	1.27	0.174	0.348	0.580	1		SW6010B	0L15011	12/16/10 17:21
7440-09-7	Potassium	180	58.0	174	290	1	UN	SW6010B	0L15011	12/17/10 20:49
7782-49-2	Selenium		0.174	0.290	0.580	1	U	SW6010B	0L15011	12/16/10 17:21
7440-22-4	Silver		0.0580	0.116	0.580	1	U	SW6010B	0L15011	12/17/10 20:49
7440-23-5	Sodium		58.0	174	290	1	U	SW6010B	0L15011	12/16/10 17:21
7440-28-0	Thallium		0.174	0.232	0.464	1	U	SW6010B	0L15011	12/16/10 17:21
7440-62-2	Vanadium	5.35	0.290	0.580	0.725	1		SW6010B	0L15011	12/17/10 20:49
7440-66-6	Zinc	2.24	0.290	0.580	1.16	1		SW6010B	0L15011	12/16/10 17:21

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ANALYSIS DATA SHEET

MR17-SS12-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-19Sampled: 12/02/10 08:30Received: 12/03/10 08:30% Solids: 85.04

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0267	0.0135	0.0342	0.0342	1	J	SW7471A	0L15002	12/16/10 14:04
7429-90-5	Aluminum	6060	2.95	5.91	11.8	1		SW6010B	0L15011	12/16/10 17:25
7440-36-0	Antimony		0.295	0.473	0.591	1	UN R	SW6010B	0L15011	12/16/10 17:25
7440-38-2	Arsenic	1.05	0.177	0.355	0.591	1		SW6010B	0L15011	12/16/10 17:25
7440-39-3	Barium	10.3	0.295	0.591	2.36	1		SW6010B	0L15011	12/16/10 17:25
7440-41-7	Beryllium	0.0737	0.0591	0.118	0.295	1	J	SW6010B	0L15011	12/16/10 17:25
7440-43-9	Cadmium	0.118	0.0591	0.118	0.295	1	U	SW6010B	0L15011	12/16/10 17:25
7440-70-2	Calcium	259	59.1	118	295	1	UN J	SW6010B	0L15011	12/17/10 20:53
7440-47-3	Chromium	6.48	0.118	0.236	0.591	1		SW6010B	0L15011	12/16/10 17:25
7440-48-4	Cobalt		0.295	0.591	0.739	1	U	SW6010B	0L15011	12/16/10 17:25
7440-50-8	Copper	1.13	0.236	0.473	0.591	1		SW6010B	0L15011	12/16/10 17:25
7439-89-6	Iron	3810	1.77	3.55	5.91	1		SW6010B	0L15011	12/16/10 17:25
7439-92-1	Lead	5.31	0.0886	0.177	0.177	1		SW6010B	0L15011	12/16/10 17:25
7439-95-4	Magnesium	165	59.1	177	295	1	UN J	SW6010B	0L15011	12/16/10 17:25
7439-96-5	Manganese	2.98	0.177	0.355	0.886	1		SW6010B	0L15011	12/17/10 20:53
7440-02-0	Nickel	0.838	0.177	0.355	0.591	1		SW6010B	0L15011	12/16/10 17:25
7440-09-7	Potassium	136	59.1	177	295	1	UN J	SW6010B	0L15011	12/17/10 20:53
7782-49-2	Selenium	0.295	0.177	0.295	0.591	1	J	SW6010B	0L15011	12/16/10 17:25
7440-22-4	Silver		0.0591	0.118	0.591	1	U	SW6010B	0L15011	12/17/10 20:53
7440-23-5	Sodium		59.1	177	295	1	U	SW6010B	0L15011	12/16/10 17:25
7440-28-0	Thallium		0.177	0.236	0.473	1	U	SW6010B	0L15011	12/16/10 17:25
7440-62-2	Vanadium	9.90	0.295	0.591	0.739	1		SW6010B	0L15011	12/17/10 20:53
7440-66-6	Zinc	2.36	0.295	0.591	1.18	1		SW6010B	0L15011	12/16/10 17:25

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ANALYSIS DATA SHEET

MR17-SS13-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-20Sampled: 12/02/10 09:00Received: 12/03/10 08:30% Solids: 85.05

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0267	0.0131	0.0333	0.0333	1	J	SW7471A	0L15002	12/16/10 14:14
7429-90-5	Aluminum	2410	2.91	5.82	11.6	1		SW6010B	0L15011	12/16/10 18:02
7440-36-0	Antimony		0.291	0.466	0.582	1	U R	SW6010B	0L15011	12/16/10 18:02
7440-38-2	Arsenic	0.591	0.175	0.349	0.582	1		SW6010B	0L15011	12/16/10 18:02
7440-39-3	Barium	10.9	0.291	0.582	2.33	1		SW6010B	0L15011	12/16/10 18:02
7440-41-7	Beryllium		0.0582	0.116	0.291	1	U	SW6010B	0L15011	12/16/10 18:02
7440-43-9	Cadmium	0.185	0.0582	0.116	0.291	1	U	SW6010B	0L15011	12/16/10 18:02
7440-70-2	Calcium	753	58.2	116	291	1	U	SW6010B	0L15011	12/17/10 21:30
7440-47-3	Chromium	2.80	0.116	0.233	0.582	1		SW6010B	0L15011	12/16/10 18:02
7440-48-4	Cobalt		0.291	0.582	0.728	1	U	SW6010B	0L15011	12/16/10 18:02
7440-50-8	Copper	1.15	0.233	0.466	0.582	1		SW6010B	0L15011	12/16/10 18:02
7439-89-6	Iron	1500	1.75	3.49	5.82	1		SW6010B	0L15011	12/17/10 21:30
7439-92-1	Lead	5.72	0.0873	0.175	0.175	1		SW6010B	0L15011	12/16/10 18:02
7439-95-4	Magnesium	124	58.2	175	291	1	U JH	SW6010B	0L15011	12/16/10 18:02
7439-96-5	Manganese	44.9	0.175	0.349	0.873	1		SW6010B	0L15011	12/17/10 21:30
7440-02-0	Nickel	0.602	0.175	0.349	0.582	1		SW6010B	0L15011	12/16/10 18:02
7440-09-7	Potassium	93.6	58.2	175	291	1	U JH	SW6010B	0L15011	12/17/10 21:30
7782-49-2	Selenium	0.215	0.175	0.291	0.582	1	J	SW6010B	0L15011	12/16/10 18:02
7440-22-4	Silver		0.0582	0.116	0.582	1	U	SW6010B	0L15011	12/17/10 21:30
7440-23-5	Sodium		58.2	175	291	1	U	SW6010B	0L15011	12/16/10 18:02
7440-28-0	Thallium		0.175	0.233	0.466	1	U	SW6010B	0L15011	12/16/10 18:02
7440-62-2	Vanadium	4.61	0.291	0.582	0.728	1		SW6010B	0L15011	12/17/10 21:30
7440-66-6	Zinc	6.08	0.291	0.582	1.16	1		SW6010B	0L15011	12/16/10 18:02

Summ
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ANALYSIS DATA SHEET

MR17-SS16-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-21Sampled: 12/02/10 09:10Received: 12/03/10 08:30% Solids: 89.42

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0233	0.0136	0.0346	0.0346	1	J	SW7471A	0L15002	12/16/10 14:16
7429-90-5	Aluminum	2270	2.85	5.71	11.4	1		SW6010B	0L15011	12/16/10 18:06
7440-36-0	Antimony		0.285	0.456	0.571	1	UNR	SW6010B	0L15011	12/16/10 18:06
7440-38-2	Arsenic	0.562	0.171	0.342	0.571	1	J	SW6010B	0L15011	12/16/10 18:06
7440-39-3	Barium	9.52	0.285	0.571	2.28	1		SW6010B	0L15011	12/16/10 18:06
7440-41-7	Beryllium		0.0571	0.114	0.285	1	U	SW6010B	0L15011	12/16/10 18:06
7440-43-9	Cadmium	0.143	0.0571	0.114	0.285	1	YU	SW6010B	0L15011	12/16/10 18:06
7440-70-2	Calcium	589	57.1	114	285	1	XJ	SW6010B	0L15011	12/17/10 21:34
7440-47-3	Chromium	2.05	0.114	0.228	0.571	1		SW6010B	0L15011	12/16/10 18:06
7440-48-4	Cobalt		0.285	0.571	0.713	1	U	SW6010B	0L15011	12/16/10 18:06
7440-50-8	Copper	1.07	0.228	0.456	0.571	1		SW6010B	0L15011	12/16/10 18:06
7439-89-6	Iron	1090	1.71	3.42	5.71	1		SW6010B	0L15011	12/17/10 21:34
7439-92-1	Lead	10.3	0.0856	0.171	0.171	1		SW6010B	0L15011	12/16/10 18:06
7439-95-4	Magnesium	96.3	57.1	171	285	1	XJ	SW6010B	0L15011	12/16/10 18:06
7439-96-5	Manganese	10.8	0.171	0.342	0.856	1		SW6010B	0L15011	12/17/10 21:34
7440-02-0	Nickel	0.428	0.171	0.342	0.571	1	J	SW6010B	0L15011	12/16/10 18:06
7440-09-7	Potassium	72.2	57.1	171	285	1	XJ	SW6010B	0L15011	12/17/10 21:34
7782-49-2	Selenium	0.315	0.171	0.285	0.571	1	J	SW6010B	0L15011	12/16/10 18:06
7440-22-4	Silver		0.0571	0.114	0.571	1	U	SW6010B	0L15011	12/17/10 21:34
7440-23-5	Sodium		57.1	171	285	1	U	SW6010B	0L15011	12/16/10 18:06
7440-28-0	Thallium		0.171	0.228	0.456	1	U	SW6010B	0L15011	12/16/10 18:06
7440-62-2	Vanadium	3.05	0.285	0.571	0.713	1		SW6010B	0L15011	12/17/10 21:34
7440-66-6	Zinc	4.34	0.285	0.571	1.14	1		SW6010B	0L15011	12/16/10 18:06

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ANALYSIS DATA SHEET

MR17-SS15-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-22Sampled: 12/02/10 09:25Received: 12/03/10 08:30% Solids: 89.42

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0173	0.0141	0.0357	0.0357	1	J	SW7471A	0L15002	12/16/10 14:18
7429-90-5	Aluminum	3250	2.77	5.54	11.1	1		SW6010B	0L15011	12/16/10 18:11
7440-36-0	Antimony		0.277	0.443	0.554	1	UN R	SW6010B	0L15011	12/16/10 18:11
7440-38-2	Arsenic	0.806	0.166	0.332	0.554	1		SW6010B	0L15011	12/16/10 18:11
7440-39-3	Barium	8.12	0.277	0.554	2.21	1		SW6010B	0L15011	12/16/10 18:11
7440-41-7	Beryllium	0.0613	0.0554	0.111	0.277	1	J	SW6010B	0L15011	12/16/10 18:11
7440-43-9	Cadmium	0.112	0.0554	0.111	0.277	1	U	SW6010B	0L15011	12/16/10 18:11
7440-70-2	Calcium	344	55.4	111	277	1	XJ	SW6010B	0L15011	12/17/10 21:39
7440-47-3	Chromium	4.07	0.111	0.221	0.554	1		SW6010B	0L15011	12/16/10 18:11
7440-48-4	Cobalt		0.277	0.554	0.692	1	U	SW6010B	0L15011	12/16/10 18:11
7440-50-8	Copper	0.709	0.221	0.443	0.554	1		SW6010B	0L15011	12/16/10 18:11
7439-89-6	Iron	1890	1.66	3.32	5.54	1		SW6010B	0L15011	12/17/10 21:39
7439-92-1	Lead	5.55	0.0830	0.166	0.166	1		SW6010B	0L15011	12/16/10 18:11
7439-95-4	Magnesium	107	55.4	166	277	1	XJ J	SW6010B	0L15011	12/16/10 18:11
7439-96-5	Manganese	4.06	0.166	0.332	0.830	1		SW6010B	0L15011	12/17/10 21:39
7440-02-0	Nickel	0.483	0.166	0.332	0.554	1	J	SW6010B	0L15011	12/16/10 18:11
7440-09-7	Potassium	111	55.4	166	277	1	UN J	SW6010B	0L15011	12/17/10 21:39
7782-49-2	Selenium	0.342	0.166	0.277	0.554	1	J	SW6010B	0L15011	12/16/10 18:11
7440-22-4	Silver		0.0554	0.111	0.554	1	U	SW6010B	0L15011	12/17/10 21:39
7440-23-5	Sodium		55.4	166	277	1	U	SW6010B	0L15011	12/16/10 18:11
7440-28-0	Thallium		0.166	0.221	0.443	1	U	SW6010B	0L15011	12/16/10 18:11
7440-62-2	Vanadium	6.29	0.277	0.554	0.692	1		SW6010B	0L15011	12/17/10 21:39
7440-66-6	Zinc	2.31	0.277	0.554	1.11	1		SW6010B	0L15011	12/16/10 18:11

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ANALYSIS DATA SHEET

MR17-SS14-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-23Sampled: 12/02/10 09:40Received: 12/03/10 08:30% Solids: 88.20

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0236	0.0143	0.0362	0.0362	1	J	SW7471A	0L15002	12/16/10 14:20
7429-90-5	Aluminum	2740	2.86	5.73	11.5	1		SW6010B	0L15011	12/16/10 18:15
7440-36-0	Antimony		0.286	0.458	0.573	1	UN ⁺	R SW6010B	0L15011	12/16/10 18:15
7440-38-2	Arsenic	0.577	0.172	0.344	0.573	1		SW6010B	0L15011	12/16/10 18:15
7440-39-3	Barium	7.79	0.286	0.573	2.29	1		SW6010B	0L15011	12/16/10 18:15
7440-41-7	Beryllium		0.0573	0.115	0.286	1	U	SW6010B	0L15011	12/16/10 18:15
7440-43-9	Cadmium	0.143	0.0573	0.115	0.286	1	U	SW6010B	0L15011	12/16/10 18:15
7440-70-2	Calcium	655	57.3	115	286	1	NJ ⁺	SW6010B	0L15011	12/17/10 21:43
7440-47-3	Chromium	4.39	0.115	0.229	0.573	1		SW6010B	0L15011	12/16/10 18:15
7440-48-4	Cobalt		0.286	0.573	0.716	1	U	SW6010B	0L15011	12/16/10 18:15
7440-50-8	Copper	0.981	0.229	0.458	0.573	1		SW6010B	0L15011	12/16/10 18:15
7439-89-6	Iron	1540	1.72	3.44	5.73	1		SW6010B	0L15011	12/17/10 21:43
7439-92-1	Lead	11.0	0.0859	0.172	0.172	1		SW6010B	0L15011	12/16/10 18:15
7439-95-4	Magnesium	97.6	57.3	172	286	1	NJ ⁺	SW6010B	0L15011	12/16/10 18:15
7439-96-5	Manganese	5.72	0.172	0.344	0.859	1		SW6010B	0L15011	12/17/10 21:43
7440-02-0	Nickel	0.589	0.172	0.344	0.573	1		SW6010B	0L15011	12/16/10 18:15
7440-09-7	Potassium	101	57.3	172	286	1	NJ ⁺	SW6010B	0L15011	12/17/10 21:43
7782-49-2	Selenium	0.267	0.172	0.286	0.573	1	J	SW6010B	0L15011	12/16/10 18:15
7440-22-4	Silver		0.0573	0.115	0.573	1	U	SW6010B	0L15011	12/17/10 21:43
7440-23-5	Sodium		57.3	172	286	1	U	SW6010B	0L15011	12/16/10 18:15
7440-28-0	Thallium		0.172	0.229	0.458	1	U	SW6010B	0L15011	12/16/10 18:15
7440-62-2	Vanadium	4.78	0.286	0.573	0.716	1		SW6010B	0L15011	12/17/10 21:43
7440-66-6	Zinc	3.71	0.286	0.573	1.15	1		SW6010B	0L15011	12/16/10 18:15

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2/12/10

ANALYSIS DATA SHEET

MR17-SS18-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-24Sampled: 12/02/10 09:55Received: 12/03/10 08:30% Solids: 85.65

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0138	0.0350	0.0350	1	U	SW7471A	0L15002	12/16/10 14:22
7429-90-5	Aluminum	2220	2.93	5.87	11.7	1		SW6010B	0L15011	12/16/10 18:20
7440-36-0	Antimony		0.293	0.469	0.587	1	UN* R	SW6010B	0L15011	12/16/10 18:20
7440-38-2	Arsenic	0.478	0.176	0.352	0.587	1	J	SW6010B	0L15011	12/16/10 18:20
7440-39-3	Barium	4.49	0.293	0.587	2.35	1		SW6010B	0L15011	12/16/10 18:20
7440-41-7	Beryllium		0.0587	0.117	0.293	1	U	SW6010B	0L15011	12/16/10 18:20
7440-43-9	Cadmium	0.117 0.116	0.0587	0.117	0.293	1	U	SW6010B	0L15011	12/16/10 18:20
7440-70-2	Calcium	166	58.7	117	293	1	UN* J	SW6010B	0L15011	12/17/10 21:48
7440-47-3	Chromium	3.14	0.117	0.235	0.587	1		SW6010B	0L15011	12/16/10 18:20
7440-48-4	Cobalt		0.293	0.587	0.733	1	U	SW6010B	0L15011	12/16/10 18:20
7440-50-8	Copper	0.684	0.235	0.469	0.587	1		SW6010B	0L15011	12/16/10 18:20
7439-89-6	Iron	1330	1.76	3.52	5.87	1		SW6010B	0L15011	12/17/10 21:48
7439-92-1	Lead	3.81	0.0880	0.176	0.176	1		SW6010B	0L15011	12/16/10 18:20
7439-95-4	Magnesium	79.3	58.7	176	293	1	UN* J	SW6010B	0L15011	12/16/10 18:20
7439-96-5	Manganese	2.53	0.176	0.352	0.880	1		SW6010B	0L15011	12/17/10 21:48
7440-02-0	Nickel	0.319	0.176	0.352	0.587	1	J	SW6010B	0L15011	12/16/10 18:20
7440-09-7	Potassium	88.2	58.7	176	293	1	UN* J	SW6010B	0L15011	12/17/10 21:48
7782-49-2	Selenium	0.279	0.176	0.293	0.587	1	J	SW6010B	0L15011	12/16/10 18:20
7440-22-4	Silver		0.0587	0.117	0.587	1	U	SW6010B	0L15011	12/17/10 21:48
7440-23-5	Sodium		58.7	176	293	1	U	SW6010B	0L15011	12/16/10 18:20
7440-28-0	Thallium		0.176	0.235	0.469	1	U	SW6010B	0L15011	12/16/10 18:20
7440-62-2	Vanadium	4.93	0.293	0.587	0.733	1		SW6010B	0L15011	12/17/10 21:48
7440-66-6	Zinc	1.90	0.293	0.587	1.17	1		SW6010B	0L15011	12/16/10 18:20

SM
2/12/11

ANALYSIS DATA SHEET

MR17-SS17-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-25Sampled: 12/02/10 10:10Received: 12/03/10 08:30% Solids: 76.47

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0334	0.0165	0.0418	0.0418	1	J	SW7471A	0L15002	12/16/10 14:23
7429-90-5	Aluminum	6050	3.30	6.60	13.2	1		SW6010B	0L15011	12/16/10 18:24
7440-36-0	Antimony		0.330	0.528	0.660	1	U+R	SW6010B	0L15011	12/16/10 18:24
7440-38-2	Arsenic	1.35	0.198	0.396	0.660	1		SW6010B	0L15011	12/16/10 18:24
7440-39-3	Barium	16.9	0.330	0.660	2.64	1		SW6010B	0L15011	12/16/10 18:24
7440-41-7	Beryllium	0.0931	0.0660	0.132	0.330	1	J	SW6010B	0L15011	12/16/10 18:24
7440-43-9	Cadmium	0.206	0.0660	0.132	0.330	1	U	SW6010B	0L15011	12/16/10 18:24
7440-70-2	Calcium	2040	66.0	132	330	1	XJ	SW6010B	0L15011	12/17/10 21:53
7440-47-3	Chromium	6.72	0.132	0.264	0.660	1		SW6010B	0L15011	12/16/10 18:24
7440-48-4	Cobalt	0.395	0.330	0.660	0.826	1	J	SW6010B	0L15011	12/16/10 18:24
7440-50-8	Copper	2.70	0.264	0.528	0.660	1		SW6010B	0L15011	12/16/10 18:24
7439-89-6	Iron	3680	1.98	3.96	6.60	1		SW6010B	0L15011	12/17/10 21:53
7439-92-1	Lead	7.85	0.0991	0.198	0.198	1		SW6010B	0L15011	12/16/10 18:24
7439-95-4	Magnesium	229	66.0	198	330	1	XPT	SW6010B	0L15011	12/16/10 18:24
7439-96-5	Manganese	8.36	0.198	0.396	0.991	1		SW6010B	0L15011	12/17/10 21:53
7440-02-0	Nickel	1.34	0.198	0.396	0.660	1		SW6010B	0L15011	12/16/10 18:24
7440-09-7	Potassium	205	66.0	198	330	1	XJ	SW6010B	0L15011	12/17/10 21:53
7782-49-2	Selenium	0.389	0.198	0.330	0.660	1	J	SW6010B	0L15011	12/16/10 18:24
7440-22-4	Silver		0.0660	0.132	0.660	1	U	SW6010B	0L15011	12/17/10 21:53
7440-23-5	Sodium		66.0	198	330	1	U	SW6010B	0L15011	12/16/10 18:24
7440-28-0	Thallium		0.198	0.264	0.528	1	U	SW6010B	0L15011	12/16/10 18:24
7440-62-2	Vanadium	10.8	0.330	0.660	0.826	1		SW6010B	0L15011	12/17/10 21:53
7440-66-6	Zinc	5.00	0.330	0.660	1.32	1		SW6010B	0L15011	12/16/10 18:24

Sum
2/12/10

ANALYSIS DATA SHEET

MR17-SS19-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-26Sampled: 12/02/10 10:55Received: 12/03/10 08:30% Solids: 83.51

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0165	0.0146	0.0370	0.0370	1	J	SW7471A	0L21001	12/28/10 10:33
7429-90-5	Aluminum	2150	2.95	5.90	11.8	1		SW6010B	0L21008	12/22/10 14:46
7440-36-0	Antimony		0.295	0.472	0.590	1	U	SW6010B	0L21008	12/22/10 14:46
7440-38-2	Arsenic	0.481	0.177	0.354	0.590	1	J	SW6010B	0L21008	12/22/10 14:46
7440-39-3	Barium	8.01	0.295	0.590	2.36	1		SW6010B	0L21008	12/22/10 14:46
7440-41-7	Beryllium		0.0590	0.118	0.295	1	U	SW6010B	0L21008	12/22/10 14:46
7440-43-9	Cadmium	<i>0.118</i>	<i>0.0968</i>	0.0590	0.118	1	<i>U</i>	SW6010B	0L21008	12/22/10 14:46
7440-70-2	Calcium	1710	59.0	118	295	1		SW6010B	0L21008	12/22/10 14:46
7440-47-3	Chromium	2.70	0.118	0.236	0.590	1		SW6010B	0L21008	12/22/10 14:46
7440-48-4	Cobalt		0.295	0.590	0.737	1	U	SW6010B	0L21008	12/22/10 14:46
7440-50-8	Copper	3.51	0.236	0.472	0.590	1		SW6010B	0L21008	12/22/10 14:46
7439-89-6	Iron	1320	1.77	3.54	5.90	1		SW6010B	0L21008	12/22/10 14:46
7439-92-1	Lead	4.21	0.0885	0.177	0.177	1		SW6010B	0L21008	12/22/10 14:46
7439-95-4	Magnesium	96.7	59.0	177	295	1	J	SW6010B	0L21008	12/22/10 14:46
7439-96-5	Manganese	20.0	0.177	0.354	0.885	1		SW6010B	0L21008	12/22/10 14:46
7440-02-0	Nickel	0.640	0.177	0.354	0.590	1		SW6010B	0L21008	12/22/10 14:46
7440-09-7	Potassium	120	59.0	177	295	1	J	SW6010B	0L21008	12/22/10 14:46
7782-49-2	Selenium	0.392	0.177	0.295	0.590	1	<i>U</i>	SW6010B	0L21008	12/22/10 14:46
7440-22-4	Silver		0.0590	0.118	0.590	1	U	SW6010B	0L21008	12/22/10 14:46
7440-23-5	Sodium		59.0	177	295	1	U	SW6010B	0L21008	12/22/10 14:46
7440-28-0	Thallium		0.295	0.295	0.472	1	<i>U</i>	SW6010B	0L21008	12/22/10 14:46
7440-62-2	Vanadium	3.99	0.295	0.590	0.737	1		SW6010B	0L21008	12/22/10 14:46
7440-66-6	Zinc	5.09	0.295	0.590	1.18	1	<i>U</i>	SW6010B	0L21008	12/22/10 14:46

CBL

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ANALYSIS DATA SHEET

MR17-SS10-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-27Sampled: 12/02/10 13:40Received: 12/03/10 08:30% Solids: 84.75

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0138	0.0135	0.0344	0.0344	1	J	SW7471A	0L21001	12/28/10 10:35
7429-90-5	Aluminum	2330	2.96	5.93	11.9	1		SW6010B	0L21008	12/22/10 14:51
7440-36-0	Antimony		0.296	0.474	0.593	1	U	SW6010B	0L21008	12/22/10 14:51
7440-38-2	Arsenic	0.525	0.178	0.356	0.593	1	J	SW6010B	0L21008	12/22/10 14:51
7440-39-3	Barium	5.88	0.296	0.593	2.37	1		SW6010B	0L21008	12/22/10 14:51
7440-41-7	Beryllium		0.0593	0.119	0.296	1	U	SW6010B	0L21008	12/22/10 14:51
7440-43-9	Cadmium	0.119	0.0935	0.119	0.296	1	U	SW6010B	0L21008	12/22/10 14:51
7440-70-2	Calcium	687	59.3	119	296	1		SW6010B	0L21008	12/22/10 14:51
7440-47-3	Chromium	3.00	0.119	0.237	0.593	1		SW6010B	0L21008	12/22/10 14:51
7440-48-4	Cobalt		0.296	0.593	0.741	1	U	SW6010B	0L21008	12/22/10 14:51
7440-50-8	Copper	0.763	0.237	0.474	0.593	1		SW6010B	0L21008	12/22/10 14:51
7439-89-6	Iron	830	1.78	3.56	5.93	1		SW6010B	0L21008	12/22/10 14:51
7439-92-1	Lead	3.17	0.0889	0.178	0.178	1		SW6010B	0L21008	12/22/10 14:51
7439-95-4	Magnesium	96.6	59.3	178	296	1	J	SW6010B	0L21008	12/22/10 14:51
7439-96-5	Manganese	9.96	0.178	0.356	0.889	1		SW6010B	0L21008	12/22/10 14:51
7440-02-0	Nickel	0.608	0.178	0.356	0.593	1		SW6010B	0L21008	12/22/10 14:51
7440-09-7	Potassium	151	59.3	178	296	1	J	SW6010B	0L21008	12/22/10 14:51
7782-49-2	Selenium	0.446	0.178	0.296	0.593	1	U	SW6010B	0L21008	12/22/10 14:51
7440-22-4	Silver		0.0593	0.119	0.593	1	U	SW6010B	0L21008	12/22/10 14:51
7440-23-5	Sodium		59.3	178	296	1	U	SW6010B	0L21008	12/22/10 14:51
7440-28-0	Thallium		0.296	0.296	0.474	1	U	SW6010B	0L21008	12/22/10 14:51
7440-62-2	Vanadium	3.89	0.296	0.593	0.741	1		SW6010B	0L21008	12/22/10 14:51
7440-66-6	Zinc	5.54	0.296	0.593	1.19	1	U	SW6010B	0L21008	12/22/10 14:51

ANALYSIS DATA SHEET

MR17-EB-120210-SS

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012036-28Sampled: 12/01/10 14:45Received: 12/03/10 08:30% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	0.200	1	U	SW7470A	0L17015	12/20/10 12:00
7429-90-5	Aluminum		12.5	25.0	50.0	1	U	SW6010B	0L17003	12/18/10 14:50
7440-36-0	Antimony		1.25	2.00	2.50	1	U	SW6010B	0L17003	12/18/10 14:50
7440-38-2	Arsenic		0.750	1.50	2.50	1	U	SW6010B	0L17003	12/18/10 14:50
7440-39-3	Barium		1.25	2.50	10.0	1	U	SW6010B	0L17003	12/18/10 14:50
7440-41-7	Beryllium		0.250	0.500	1.25	1	U	SW6010B	0L17003	12/18/10 14:50
7440-43-9	Cadmium		0.250	0.500	1.25	1	U	SW6010B	0L17003	12/18/10 14:50
7440-70-2	Calcium		250	500	1250	1	U	SW6010B	0L17003	12/18/10 14:50
7440-47-3	Chromium		0.500	1.00	2.50	1	U	SW6010B	0L17003	12/18/10 14:50
7440-48-4	Cobalt		1.25	2.50	3.12	1	U	SW6010B	0L17003	12/18/10 14:50
7440-50-8	Copper		1.00	2.00	2.50	1	U	SW6010B	0L17003	12/18/10 14:50
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010B	0L17003	12/18/10 14:50
7439-92-1	Lead		0.375	0.750	0.750	1	U	SW6010B	0L17003	12/18/10 14:50
7439-95-4	Magnesium		250	750	1250	1	U	SW6010B	0L17003	12/18/10 14:50
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010B	0L17003	12/18/10 14:50
7440-02-0	Nickel		0.750	1.50	2.50	1	U	SW6010B	0L17003	12/18/10 14:50
7440-09-7	Potassium		250	750	1250	1	U	SW6010B	0L17003	12/18/10 14:50
7782-49-2	Selenium		0.750	1.25	2.50	1	U	SW6010B	0L17003	12/18/10 14:50
7440-22-4	Silver		0.250	0.500	2.50	1	U	SW6010B	0L17003	12/18/10 14:50
7440-23-5	Sodium		250	750	1250	1	U	SW6010B	0L17003	12/18/10 14:50
7440-28-0	Thallium		0.750	1.00	2.00	1	U	SW6010B	0L17003	12/18/10 14:50
7440-62-2	Vanadium		1.25	2.50	3.12	1	U	SW6010B	0L17003	12/18/10 14:50
7440-66-6	Zinc		1.25	2.50	5.00	1	U	SW6010B	0L17003	12/18/10 14:50

ANALYSIS DATA SHEET

MR17-EB-120210-IS

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012036-29Sampled: 12/02/10 15:00Received: 12/03/10 08:30% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	0.200	1	U	SW7470A	0L17015	12/20/10 12:02
7429-90-5	Aluminum		12.5	25.0	50.0	1	U	SW6010B	0L17003	12/18/10 14:55
7440-36-0	Antimony		1.25	2.00	2.50	1	U	SW6010B	0L17003	12/18/10 14:55
7440-38-2	Arsenic		0.750	1.50	2.50	1	U	SW6010B	0L17003	12/18/10 14:55
7440-39-3	Barium		1.25	2.50	10.0	1	U	SW6010B	0L17003	12/18/10 14:55
7440-41-7	Beryllium		0.250	0.500	1.25	1	U	SW6010B	0L17003	12/18/10 14:55
7440-43-9	Cadmium		0.250	0.500	1.25	1	U	SW6010B	0L17003	12/18/10 14:55
7440-70-2	Calcium		250	500	1250	1	U	SW6010B	0L17003	12/18/10 14:55
7440-47-3	Chromium		0.500	1.00	2.50	1	U	SW6010B	0L17003	12/18/10 14:55
7440-48-4	Cobalt		1.25	2.50	3.12	1	U	SW6010B	0L17003	12/18/10 14:55
7440-50-8	Copper		1.00	2.00	2.50	1	U	SW6010B	0L17003	12/18/10 14:55
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010B	0L17003	12/18/10 14:55
7439-92-1	Lead		0.375	0.750	0.750	1	U	SW6010B	0L17003	12/18/10 14:55
7439-95-4	Magnesium		250	750	1250	1	U	SW6010B	0L17003	12/18/10 14:55
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010B	0L17003	12/18/10 14:55
7440-02-0	Nickel		0.750	1.50	2.50	1	U	SW6010B	0L17003	12/18/10 14:55
7440-09-7	Potassium		250	750	1250	1	U	SW6010B	0L17003	12/18/10 14:55
7782-49-2	Selenium		0.750	1.25	2.50	1	U	SW6010B	0L17003	12/18/10 14:55
7440-22-4	Silver		0.250	0.500	2.50	1	U	SW6010B	0L17003	12/18/10 14:55
7440-23-5	Sodium		250	750	1250	1	U	SW6010B	0L17003	12/18/10 14:55
7440-28-0	Thallium		0.750	1.00	2.00	1	U	SW6010B	0L17003	12/18/10 14:55
7440-62-2	Vanadium		1.25	2.50	3.12	1	U	SW6010B	0L17003	12/18/10 14:55
7440-66-6	Zinc		1.25	2.50	5.00	1	U	SW6010B	0L17003	12/18/10 14:55

ANALYSIS DATA SHEET

MR17-IS15-1-3-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-30Sampled: 12/02/10 14:40Received: 12/03/10 08:30% Solids: 89.27

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0132	0.0336	0.0336	1	U	SW7471A	0L21001	12/28/10 10:37
7429-90-5	Aluminum	2370	2.86	5.72	11.4	1		SW6010B	0L21008	12/22/10 14:55
7440-36-0	Antimony		0.286	0.457	0.572	1	U	SW6010B	0L21008	12/22/10 14:55
7440-38-2	Arsenic	0.409	0.171	0.343	0.572	1	J	SW6010B	0L21008	12/22/10 14:55
7440-39-3	Barium	6.41	0.286	0.572	2.29	1		SW6010B	0L21008	12/22/10 14:55
7440-41-7	Beryllium		0.0572	0.114	0.286	1	U	SW6010B	0L21008	12/22/10 14:55
7440-43-9	Cadmium		0.0572	0.114	0.286	1	U	SW6010B	0L21008	12/22/10 14:55
7440-70-2	Calcium	287	57.2	114	286	1		SW6010B	0L21008	12/22/10 14:55
7440-47-3	Chromium	2.92	0.114	0.229	0.572	1		SW6010B	0L21008	12/22/10 14:55
7440-48-4	Cobalt		0.286	0.572	0.714	1	U	SW6010B	0L21008	12/22/10 14:55
7440-50-8	Copper	0.780	0.229	0.457	0.572	1		SW6010B	0L21008	12/22/10 14:55
7439-89-6	Iron	942	1.71	3.43	5.72	1		SW6010B	0L21008	12/22/10 14:55
7439-92-1	Lead	2.49	0.0857	0.171	0.171	1		SW6010B	0L21008	12/22/10 14:55
7439-95-4	Magnesium	84.9	57.2	171	286	1	J	SW6010B	0L21008	12/22/10 14:55
7439-96-5	Manganese	3.01	0.171	0.343	0.857	1		SW6010B	0L21008	12/22/10 14:55
7440-02-0	Nickel	0.708	0.171	0.343	0.572	1		SW6010B	0L21008	12/22/10 14:55
7440-09-7	Potassium	73.9	57.2	171	286	1	J	SW6010B	0L21008	12/22/10 14:55
7782-49-2	Selenium	0.286	0.171	0.286	0.572	1	U	SW6010B	0L21008	12/22/10 14:55
7440-22-4	Silver		0.0572	0.114	0.572	1	U	SW6010B	0L21008	12/22/10 14:55
7440-23-5	Sodium		57.2	171	286	1	U	SW6010B	0L21008	12/22/10 14:55
7440-28-0	Thallium		0.286	0.286	0.457	1	U	SW6010B	0L21008	12/22/10 14:55
7440-62-2	Vanadium	3.86	0.286	0.572	0.714	1		SW6010B	0L21008	12/22/10 14:55
7440-66-6	Zinc	1.62	0.286	0.572	1.14	1		SW6010B	0L21008	12/22/10 14:55

Project: MCB Camp Lejeune (CTO-141), Jacksonville, NC
Laboratory: Empirical Laboratories, LLC
Sample Delivery Group: 1012060
Fraction: Inorganic
Matrix: Solid and Aqueous
Report Date: 2/22/2011

This analytical quality assurance report is based upon a review of analytical data generated for soil and groundwater samples. Three equipment blanks, two field blanks, two field duplicate samples, and one matrix spike/matrix spike duplicate were submitted with the samples in this SDG. The sample locations, laboratory identification numbers, sample collection date, sample matrix, and analyses performed are presented in Table 1.

The samples were analyzed for metals. The sample analyses were performed in accordance with the procedures outlined in the method referenced at the end of this report.

All sample analyses have undergone an analytical quality assurance review to ensure adherence to the required protocols. Results have been validated or qualified according to general guidance provided in the "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", OSWER 9240.1-45 EPA 540-R-04-004, October 2004 and "Data Validation Standard Operating Procedures for Contract Laboratory Program Routine Analytical Services", USEPA Region IV, Revision 2.1, July 1999.

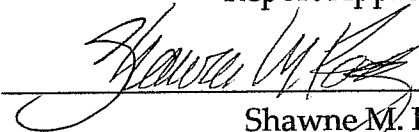
These documents specify procedures for validating data generated for CLP analyses. Therefore, the quality control requirements specified in the methods and associated acceptance criteria were also used to evaluate the non-CLP data. The parameters presented on the following page were evaluated.


- X • Data Completeness
- X • Chain of Custody Documentation
- X • Holding Times
- X • Initial and Continuing Calibrations
- X • ICP Interference Check Sample Results
- X • Laboratory and Field Blank Analysis Results
- X • Matrix Spike Recoveries and Reproducibility
- X • Laboratory Duplicate Analysis Results
- X • ICP Serial Dilution Results
- X • Field Duplicate Analysis Results
- X • Laboratory Control Sample Results
 - GFAA Post-Digestion Spike Recovery/Duplicate Burn Precision
- X • Qualitative Identification
- X • Quantitation/Reporting Limits

X - Denotes parameter evaluated.

It is recommended that the data only be used according to the qualifiers presented, and discussed in this report. All other data should be considered qualitatively and quantitatively valid as reported by the laboratory, based on the items evaluated.

Report Approved By:


 Shawne M. Rodgers
 President


 Date

1.0 DATA COMPLETENESS

The data package was complete.

2.0 CHAIN OF CUSTODY DOCUMENTATION

The chain of custody (COC) documentation was complete.

3.0 HOLDING TIMES

All criteria were met. No qualifiers were applied.

4.0 INITIAL AND CONTINUING CALIBRATIONS

All criteria were met. No qualifiers were applied.

5.0 ICP INTERFERENCE CHECK SAMPLE RESULTS

All criteria were met. No qualifiers were applied.

6.0 LABORATORY AND FIELD BLANK ANALYSIS RESULTS

The following positive results are considered to be nondetect due to the presence of these analytes in the associated continuing calibration blanks and/or preparation blanks presented in Table 2. The analytes were detected in the associated continuing calibration blanks and/or preparation blanks at levels less than the reporting limit (RL), indicating the possibility of a false positive at this level.

Affected sample results less than the limit of detection (LOD) were replaced by this numeric value and marked "U". Sample results greater than the LOD, but less than the RL, were marked "U".

Analyte	Affected Samples
Selenium	MR17-IS07-5-7-10D, MR17-IS06-8-10-10D, MR17-IS08-6-8-10D, MR17-IS04-3-5-10D, MR17-IS05-1-3-10D, MR17-IS03-3-5-10D, MR17-IS01-2-4-10D
Zinc	MR17-IS05-1-3-10D, MR17-IS03-3-5-10D

7.0

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND REPRODUCIBILITY

The nondetected results for antimony for samples MR17-IS07-5-7-10D, MR17-IS07D-5-7-10D, MR17-IS06-8-10-10D, MR17-IS08-6-8-10D, MR17-IS04-3-5-10D, MR17-IS05-1-3-10D, MR17-IS03-3-5-10D, MR17-IS02-4-6-10D, and MR17-IS01-2-4-10D have been rejected and should be considered suspect. Positive results for this analyte should be considered biased low quantitative estimates. The associated matrix spike/matrix spike recovery was less than 30 percent for this analyte. The poor recovery indicates the presence of severe interferences for samples of similar matrix. The nondetected results have been marked "R" to indicate that they are suspect. Positive results are marked "J-" to indicate that they are biased low.

Positive results for the following samples should be considered biased high quantitative estimates and may be lower than reported. The associated matrix spike recovery was above the acceptance limit for these analytes. The high recoveries indicate the presence of interferences for aluminum for samples of similar matrix. The positive results have been marked "J+" to indicate that they are biased high quantitative estimates.

Analyte	Affected Samples
Calcium	MR17-IS06-8-10-10D, MR17-IS08-6-8-10D, MR17-IS02-4-6-10D, MR17-IS01-2-4-10D
Chromium	MR17-IS07-5-7-10D, MR17-IS07D-5-7-10D, MR17-IS06-8-10-10D, MR17-IS08-6-8-10D, MR17-IS04-3-5-10D, MR17-IS05-1-3-10D, MR17-IS03-3-5-10D, MR17-IS02-4-6-10D, MR17-IS01-2-4-10D
Magnesium	MR17-IS07-5-7-10D, MR17-IS07D-5-7-10D, MR17-IS06-8-10-10D, MR17-IS08-6-8-10D, MR17-IS04-3-5-10D, MR17-IS02-4-6-10D
Potassium	MR17-IS07-5-7-10D, MR17-IS07D-5-7-10D, MR17-IS06-8-10-10D, MR17-IS08-6-8-10D, MR17-IS04-3-5-10D, MR17-IS02-4-6-10D

Positive results and RLs reported for the following samples should be considered biased low quantitative estimates, and may be higher than reported. The associated matrix spike recoveries were below the acceptance limits for these analytes. The low recoveries indicate the presence of interferences for samples of similar matrix. Positive results have been marked with "J-" qualifiers to indicate that they are biased low quantitative estimates. RLs are marked "UJ".

Analyte	Affected Samples
Aluminum	MR17-MW09-10D, MR17-MW15-10D, MR17-MW15D-10D, MR17-MW14-10D, MR17-MW13-10D, MW17-MW10-10D, MW17-MW11-10D, MW17-MW12-10D, MW17-MW10-10D, MW17-MW11-10D, MW17-MW12-10D
Iron	MR17-MW09-10D, MR17-MW09-10D, MR17-MW15-10D, MR17-MW15D-10D, MR17-MW14-10D, MR17-MW13-10D, MW17-MW10-10D, MW17-MW11-10D, MW17-MW12-10D, MW17-MW10-10D, MW17-MW11-10D, MW17-MW12-10D
Zinc	MR17-MW09-10D, MR17-MW09-10D, MR17-MW15-10D, MR17-MW15D-10D, MR17-MW14-10D, MR17-MW13-10D, MW17-MW10-10D, MW17-MW11-10D, MW17-MW12-10D, MW17-MW10-10D, MW17-MW11-10D, MW17-MW12-10D

8.0

LABORATORY DUPLICATE RESULTS

All criteria were met. No qualifiers were applied.

9.0 ICP SERIAL DILUTION RESULTS

All criteria were met. No qualifiers were applied.

10.0 FIELD DUPLICATE RESULTS

Duplicate samples MR17-IS07-5-7-10D and MR17-IS07D-5-7-10D, and MR17-MW15-10D and MR17-MW15D-10D were submitted to the laboratory evaluate sampling and analytical precision for those analytes determined to be present. Results for these duplicate samples are presented in Tables 3 and 4. There are no USEPA-established acceptance criteria for field duplicate samples. EDQ uses internal an acceptance criterion of 40 percent for values greater than five times the reporting limit (RL) (or \pm twice the RL for results less than five times the RL) to evaluate soil duplicate samples. An internal acceptance criterion of 25 percent for values greater than five times the reporting limit (RL) (or \pm the RL for results less than five times the RL) to evaluate aqueous duplicate samples.

11.0 LABORATORY CONTROL SAMPLE RESULTS

All criteria were met. No qualifiers were applied.

12.0 GFAA POST-DIGESTION SPIKE/DUPLICATE BURN

This parameter is not applicable to the analyses completed.

13.0 QUALITATIVE IDENTIFICATION

All criteria were met. No qualifiers were applied.

14.0 QUANTITATION/REPORTING LIMITS

As required by USEPA protocol, all analytes, which were qualitatively identified at concentrations below their respective RLs, have been marked with "J" qualifiers to indicate that they are quantitative estimates.

METHODOLOGY REFERENCES

Analysis	Reference
Metals (Except Mercury)	Method 6010B, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997
Mercury	Method 7471A, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997

Table 1 Samples For Data Validation Review
MCB Camp Lejeune, North Carolina (CTO-141)

SAMPLE I.D.	LABORATORY ID	SDG	DATE COLLECTED	ANALYSES PERFORMED				
				MATRIX	8330	6850	6010B	7470A 7471A
Sample_Name	Lab_Sample_ID	SDG	DateTime_Collected	Total Of SDG	8330	6850	6010B	7470A 7471A
MR17-IS07-5-7-10D	1012060-01	1012060	12/04/2010 11:35	Soil	X	X	X	X
MR17-IS07D-5-7-10D	1012060-02	1012060	12/04/2010 11:40	Soil	X	X	X	X
MR17-IS06-8-10-10D	1012060-03	1012060	12/04/2010 12:05	Soil	X	X	X	X
MR17-IS08-6-8-10D	1012060-04	1012060	12/04/2010 12:45	Soil	X	X	X	X
MR17-IS04-3-5-10D	1012060-05	1012060	12/04/2010 12:55	Soil	X	X	X	X
MR17-IS05-1-3-10D	1012060-06	1012060	12/04/2010 13:10	Soil	X	X	X	X
MR17-IS03-3-5-10D	1012060-07	1012060	12/04/2010 13:30	Soil	X	X	X	X
MR17-IS02-4-6-10D	1012060-08	1012060	12/04/2010 13:50	Soil	X	X	X	X
MR17-IS01-2-4-10D	1012060-09	1012060	12/04/2010 14:10	Soil	X	X	X	X
MR17-EB120410-IS	1012060-10	1012060	12/04/2010 16:30	Equipment Blank	X	X	X	X
MR17-MW09-10D	1012060-11	1012060	12/05/2010 12:45	Groundwater	X	X	X	X
MR17-MW15-10D	1012060-13	1012060	12/05/2010 14:00	Groundwater	X	X	X	X
MR17-MW15D-10D	1012060-14	1012060	12/05/2010 14:05	Groundwater	X	X	X	X
MR17-EB120510-MW	1012060-15	1012060	12/05/2010 15:00	Equipment Blank	X	X	X	X
MR17-MW14-10D	1012060-16	1012060	12/06/2010 08:10	Groundwater	X	X	X	X
MR17-MW13-10D	1012060-17	1012060	12/06/2010 09:20	Groundwater	X	X	X	X
MW17-MW10-10D	1012060-18	1012060	12/06/2010 11:20	Groundwater	X	X	X	X
MW17-MW11-10D	1012060-19	1012060	12/06/2010 12:25	Groundwater	X	X	X	X
MW17-MW12-10D	1012060-20	1012060	12/06/2010 13:25	Groundwater	X	X	X	X
MW17-EB120610-MW	1012060-21	1012060	12/06/2010 13:45	Equipment Blank	X	X	X	X
MW17-FB120610-10D	1012060-22	1012060	12/06/2010 14:00	Field Blank	X	X	X	X
MW17-MW10-10D	1012060-23	1012060	12/06/2010 11:20	Groundwater			X	X
MW17-MW11-10D	1012060-24	1012060	12/06/2010 12:25	Groundwater			X	X
MW17-MW12-10D	1012060-25	1012060	12/06/2010 13:25	Groundwater			X	X
MW17-EB120610-MW	1012060-26	1012060	12/06/2010 13:45	Equipment Blank			X	X
MW17-FB120610-10D	1012060-27	1012060	12/06/2010 14:00	Field Blank			X	X

Table 2

Blank Results for Inorganic Analyses

[illegible]

ANALYSIS DATA SHEET

MR17-IS07-5-7-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012060-01Sampled: 12/04/10 11:35Received: 12/07/10 08:40% Solids: 86.72

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0150	0.0381	0.0381	1	U	SW7471A	0L21001	12/28/10 10:49
7429-90-5	Aluminum	5430	2.93	5.85	11.7	1		SW6010B	0L21008	12/22/10 15:18
7440-36-0	Antimony		0.293	0.468	0.585	1	UN R	SW6010B	0L21008	12/22/10 15:18
7440-38-2	Arsenic	1.40	0.176	0.351	0.585	1		SW6010B	0L21008	12/22/10 15:18
7440-39-3	Barium	7.10	0.293	0.585	2.34	1		SW6010B	0L21008	12/22/10 15:18
7440-41-7	Beryllium	0.107	0.0585	0.117	0.293	1	J	SW6010B	0L21008	12/22/10 15:18
7440-43-9	Cadmium		0.0585	0.117	0.293	1	U	SW6010B	0L21008	12/22/10 15:18
7440-70-2	Calcium		58.5	117	293	1	UN	SW6010B	0L21008	12/22/10 15:18
7440-47-3	Chromium	14.9	0.117	0.234	0.585	1	X JT	SW6010B	0L21008	12/22/10 15:18
7440-48-4	Cobalt		0.293	0.585	0.732	1	U	SW6010B	0L21008	12/22/10 15:18
7440-50-8	Copper	1.13	0.234	0.468	0.585	1		SW6010B	0L21008	12/22/10 15:18
7439-89-6	Iron	3170	1.76	3.51	5.85	1		SW6010B	0L21008	12/22/10 15:18
7439-92-1	Lead	3.84	0.0878	0.176	0.176	1		SW6010B	0L21008	12/22/10 15:18
7439-95-4	Magnesium	154	58.5	176	293	1	JN	SW6010B	0L21008	12/22/10 15:18
7439-96-5	Manganese	6.13	0.176	0.351	0.878	1		SW6010B	0L21008	12/22/10 15:18
7440-02-0	Nickel	0.901	0.176	0.351	0.585	1		SW6010B	0L21008	12/22/10 15:18
7440-09-7	Potassium	257	58.5	176	293	1	JN	SW6010B	0L21008	12/22/10 15:18
7782-49-2	Selenium	0.295	0.244	0.176	0.293	1	BTU	SW6010B	0L21008	12/22/10 15:18
7440-22-4	Silver		0.0585	0.117	0.585	1	U	SW6010B	0L21008	12/22/10 15:18
7440-23-5	Sodium		58.5	176	293	1	U	SW6010B	0L21008	12/22/10 15:18
7440-28-0	Thallium		0.176	0.234	0.468	1	U	SW6010B	0L21008	12/22/10 15:18
7440-62-2	Vanadium	10.2	0.293	0.585	0.732	1		SW6010B	0L21008	12/22/10 15:18
7440-66-6	Zinc	2.57	0.293	0.585	1.17	1	B	SW6010B	0L21008	12/22/10 15:18

SMA
12/10/11

ANALYSIS DATA SHEET

MR17-IS07D-5-7-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012060-02Sampled: 12/04/10 11:40Received: 12/07/10 08:40% Solids: 78.04

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0132	0.0334	0.0334	1	U	SW7471A	0L21001	12/28/10 10:51
7429-90-5	Aluminum	9110	3.07	6.13	12.3	1		SW6010B	0L21008	12/22/10 15:23
7440-36-0	Antimony		0.307	0.491	0.613	1	UN [*] R	SW6010B	0L21008	12/22/10 15:23
7440-38-2	Arsenic	1.11	0.184	0.368	0.613	1		SW6010B	0L21008	12/22/10 15:23
7440-39-3	Barium	8.58	0.307	0.613	2.45	1		SW6010B	0L21008	12/22/10 15:23
7440-41-7	Beryllium	0.193	0.0613	0.123	0.307	1	J	SW6010B	0L21008	12/22/10 15:23
7440-43-9	Cadmium		0.0613	0.123	0.307	1	U	SW6010B	0L21008	12/22/10 15:23
7440-70-2	Calcium		61.3	123	307	1	U ^X	SW6010B	0L21008	12/22/10 15:23
7440-47-3	Chromium	9.24	0.123	0.245	0.613	1	X ^{CH}	SW6010B	0L21008	12/22/10 15:23
7440-48-4	Cobalt		0.307	0.613	0.766	1	U	SW6010B	0L21008	12/22/10 15:23
7440-50-8	Copper	1.21	0.245	0.491	0.613	1		SW6010B	0L21008	12/22/10 15:23
7439-89-6	Iron	2600	1.84	3.68	6.13	1		SW6010B	0L21008	12/22/10 15:23
7439-92-1	Lead	4.68	0.0920	0.184	0.184	1		SW6010B	0L21008	12/22/10 15:23
7439-95-4	Magnesium	245	61.3	184	307	1	J ^X	SW6010B	0L21008	12/22/10 15:23
7439-96-5	Manganese	3.99	0.184	0.368	0.920	1		SW6010B	0L21008	12/22/10 15:23
7440-02-0	Nickel	0.828	0.184	0.368	0.613	1		SW6010B	0L21008	12/22/10 15:23
7440-09-7	Potassium	401	61.3	184	307	1	X ^{PT}	SW6010B	0L21008	12/22/10 15:23
7782-49-2	Selenium		0.184	0.307	0.613	1	B ^U	SW6010B	0L21008	12/22/10 15:23
7440-22-4	Silver		0.0613	0.123	0.613	1	U	SW6010B	0L21008	12/22/10 15:23
7440-23-5	Sodium		61.3	184	307	1	U	SW6010B	0L21008	12/22/10 15:23
7440-28-0	Thallium		0.184	0.245	0.491	1	U	SW6010B	0L21008	12/22/10 15:23
7440-62-2	Vanadium	21.9	0.307	0.613	0.766	1		SW6010B	0L21008	12/22/10 15:23
7440-66-6	Zinc	3.48	0.307	0.613	1.23	1	B [/]	SW6010B	0L21008	12/22/10 15:23

ANALYSIS DATA SHEET

MR17-IS06-8-10-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012060-03Sampled: 12/04/10 12:05Received: 12/07/10 08:40% Solids: 81.43

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0160	0.0405	0.0405	1	U	SW7471A	0L21001	12/28/10 10:52
7429-90-5	Aluminum	11600	3.09	6.17	12.3	1		SW6010B	0L21008	12/22/10 15:27
7440-36-0	Antimony		0.309	0.494	0.617	1	UN*	R SW6010B	0L21008	12/22/10 15:27
7440-38-2	Arsenic	1.92	0.185	0.370	0.617	1		SW6010B	0L21008	12/22/10 15:27
7440-39-3	Barium	8.47	0.309	0.617	2.47	1		SW6010B	0L21008	12/22/10 15:27
7440-41-7	Beryllium	0.156	0.0617	0.123	0.309	1	J	SW6010B	0L21008	12/22/10 15:27
7440-43-9	Cadmium		0.0617	0.123	0.309	1	U	SW6010B	0L21008	12/22/10 15:27
7440-70-2	Calcium	457	61.7	123	309	1	XJH	SW6010B	0L21008	12/22/10 15:27
7440-47-3	Chromium	10.7	0.123	0.247	0.617	1	XJH	SW6010B	0L21008	12/22/10 15:27
7440-48-4	Cobalt		0.309	0.617	0.771	1	U	SW6010B	0L21008	12/22/10 15:27
7440-50-8	Copper	1.09	0.247	0.494	0.617	1		SW6010B	0L21008	12/22/10 15:27
7439-89-6	Iron	2110	1.85	3.70	6.17	1		SW6010B	0L21008	12/22/10 15:27
7439-92-1	Lead	5.44	0.0926	0.185	0.185	1		SW6010B	0L21008	12/22/10 15:27
7439-95-4	Magnesium	308	61.7	185	309	1	XJH	SW6010B	0L21008	12/22/10 15:27
7439-96-5	Manganese	4.48	0.185	0.370	0.926	1		SW6010B	0L21008	12/22/10 15:27
7440-02-0	Nickel	1.10	0.185	0.370	0.617	1		SW6010B	0L21008	12/22/10 15:27
7440-09-7	Potassium	477	61.7	185	309	1	XJH	SW6010B	0L21008	12/22/10 15:27
7782-49-2	Selenium	0.388	0.185	0.309	0.617	1	PU	SW6010B	0L21008	12/22/10 15:27
7440-22-4	Silver		0.0617	0.123	0.617	1	U	SW6010B	0L21008	12/22/10 15:27
7440-23-5	Sodium		61.7	185	309	1	U	SW6010B	0L21008	12/22/10 15:27
7440-28-0	Thallium		0.247	0.247	0.494	1	MU	SW6010B	0L21008	12/22/10 15:27
7440-62-2	Vanadium	10.9	0.309	0.617	0.771	1		SW6010B	0L21008	12/22/10 15:27
7440-66-6	Zinc	3.52	0.309	0.617	1.23	1	B	SW6010B	0L21008	12/22/10 15:27

SMK
2/2/10/11

ANALYSIS DATA SHEET

MR17-IS08-6-8-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012060-04Sampled: 12/04/10 12:45Received: 12/07/10 08:40% Solids: 78.03

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0147	0.0373	0.0373	1	U	SW7471A	0L21001	12/28/10 10:57
7429-90-5	Aluminum	12300	3.16	6.31	12.6	1		SW6010B	0L21008	12/22/10 16:04
7440-36-0	Antimony		0.316	0.505	0.631	1	UN *R	SW6010B	0L21008	12/22/10 16:04
7440-38-2	Arsenic	0.752	0.189	0.379	0.631	1		SW6010B	0L21008	12/22/10 16:04
7440-39-3	Barium	10.7	0.316	0.631	2.53	1		SW6010B	0L21008	12/22/10 16:04
7440-41-7	Beryllium	0.174	0.0631	0.126	0.316	1	J	SW6010B	0L21008	12/22/10 16:04
7440-43-9	Cadmium		0.0631	0.126	0.316	1	U	SW6010B	0L21008	12/22/10 16:04
7440-70-2	Calcium	108	63.1	126	316	1	J U	SW6010B	0L21008	12/22/10 16:04
7440-47-3	Chromium	11.7	0.126	0.253	0.631	1	N U	SW6010B	0L21008	12/22/10 16:04
7440-48-4	Cobalt		0.316	0.631	0.789	1	U	SW6010B	0L21008	12/22/10 16:04
7440-50-8	Copper	1.59	0.253	0.505	0.631	1		SW6010B	0L21008	12/22/10 16:04
7439-89-6	Iron	2310	1.89	3.79	6.31	1		SW6010B	0L21008	12/22/10 16:04
7439-92-1	Lead	5.66	0.0947	0.189	0.189	1		SW6010B	0L21008	12/22/10 16:04
7439-95-4	Magnesium	314	63.1	189	316	1	J U	SW6010B	0L21008	12/22/10 16:04
7439-96-5	Manganese	4.76	0.189	0.379	0.947	1		SW6010B	0L21008	12/22/10 16:04
7440-02-0	Nickel	1.08	0.189	0.379	0.631	1		SW6010B	0L21008	12/22/10 16:04
7440-09-7	Potassium	529	63.1	189	316	1	N U	SW6010B	0L21008	12/22/10 16:04
7782-49-2	Selenium	0.314	0.306	0.189	0.316	1	B U	SW6010B	0L21008	12/22/10 16:04
7440-22-4	Silver		0.126	0.126	0.631	1	M U	SW6010B	0L21008	12/22/10 16:04
7440-23-5	Sodium		63.1	189	316	1	U	SW6010B	0L21008	12/22/10 16:04
7440-28-0	Thallium		0.316	0.316	0.505	1	M U	SW6010B	0L21008	12/22/10 16:04
7440-62-2	Vanadium	15.5	0.316	0.631	0.789	1		SW6010B	0L21008	12/22/10 16:04
7440-66-6	Zinc	4.15	0.316	0.631	1.26	1	B	SW6010B	0L21008	12/22/10 16:04

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ANALYSIS DATA SHEET

MR17-IS04-3-5-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012060-05Sampled: 12/04/10 12:55Received: 12/07/10 08:40% Solids: 89.04

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0125	0.0318	0.0330	1	U	SW7471A	0L21001	12/28/10 11:00
7429-90-5	Aluminum	12000	2.82	5.64	11.3	1		SW6010B	0L21008	12/22/10 16:09
7440-36-0	Antimony		0.282	0.451	0.564	1	UN* R	SW6010B	0L21008	12/22/10 16:09
7440-38-2	Arsenic	0.729	0.169	0.339	0.564	1		SW6010B	0L21008	12/22/10 16:09
7440-39-3	Barium	11.0	0.282	0.564	2.26	1		SW6010B	0L21008	12/22/10 16:09
7440-41-7	Beryllium	0.142	0.0564	0.113	0.282	1	J	SW6010B	0L21008	12/22/10 16:09
7440-43-9	Cadmium		0.0564	0.113	0.282	1	U	SW6010B	0L21008	12/22/10 16:09
7440-70-2	Calcium		56.4	113	282	1	UN	SW6010B	0L21008	12/22/10 16:09
7440-47-3	Chromium	12.7	0.113	0.226	0.564	1	XJH	SW6010B	0L21008	12/22/10 16:09
7440-48-4	Cobalt		0.282	0.564	0.705	1	U	SW6010B	0L21008	12/22/10 16:09
7440-50-8	Copper	1.73	0.226	0.451	0.564	1		SW6010B	0L21008	12/22/10 16:09
7439-89-6	Iron	1910	1.69	3.39	5.64	1		SW6010B	0L21008	12/22/10 16:09
7439-92-1	Lead	4.74	0.0847	0.169	0.169	1		SW6010B	0L21008	12/22/10 16:09
7439-95-4	Magnesium	283	56.4	169	282	1	XJH	SW6010B	0L21008	12/22/10 16:09
7439-96-5	Manganese	4.45	0.169	0.339	0.847	1		SW6010B	0L21008	12/22/10 16:09
7440-02-0	Nickel	1.08	0.169	0.339	0.564	1		SW6010B	0L21008	12/22/10 16:09
7440-09-7	Potassium	466	56.4	169	282	1	XJH	SW6010B	0L21008	12/22/10 16:09
7782-49-2	Selenium	0.309	0.169	0.282	0.564	1	BTU	SW6010B	0L21008	12/22/10 16:09
7440-22-4	Silver		0.0564	0.113	0.564	1	U	SW6010B	0L21008	12/22/10 16:09
7440-23-5	Sodium		56.4	169	282	1	U	SW6010B	0L21008	12/22/10 16:09
7440-28-0	Thallium		0.282	0.282	0.451	1	U	SW6010B	0L21008	12/22/10 16:09
7440-62-2	Vanadium	13.2	0.282	0.564	0.705	1		SW6010B	0L21008	12/22/10 16:09
7440-66-6	Zinc	2.91	0.282	0.564	1.13	1	B	SW6010B	0L21008	12/22/10 16:09

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ANALYSIS DATA SHEET

MR17-IS05-1-3-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012060-06Sampled: 12/04/10 13:10Received: 12/07/10 08:40% Solids: 82.38

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0158	0.0401	0.0401	1	U	SW7471A	0L21001	12/28/10 11:02
7429-90-5	Aluminum	1410	3.08	6.16	12.3	1		SW6010B	0L21008	12/22/10 16:13
7440-36-0	Antimony		0.308	0.493	0.616	1	UN *R	SW6010B	0L21008	12/22/10 16:13
7440-38-2	Arsenic		0.185	0.370	0.616	1	U	SW6010B	0L21008	12/22/10 16:13
7440-39-3	Barium	1.98	0.308	0.616	2.46	1	J	SW6010B	0L21008	12/22/10 16:13
7440-41-7	Beryllium		0.0616	0.123	0.308	1	U	SW6010B	0L21008	12/22/10 16:13
7440-43-9	Cadmium		0.0616	0.123	0.308	1	U	SW6010B	0L21008	12/22/10 16:13
7440-70-2	Calcium		61.6	123	308	1	UN	SW6010B	0L21008	12/22/10 16:13
7440-47-3	Chromium	1.47	0.123	0.246	0.616	1	X J	SW6010B	0L21008	12/22/10 16:13
7440-48-4	Cobalt		0.308	0.616	0.770	1	U	SW6010B	0L21008	12/22/10 16:13
7440-50-8	Copper	0.466	0.246	0.493	0.616	1	J	SW6010B	0L21008	12/22/10 16:13
7439-89-6	Iron	245	1.85	3.70	6.16	1		SW6010B	0L21008	12/22/10 16:13
7439-92-1	Lead	1.76	0.0924	0.185	0.185	1		SW6010B	0L21008	12/22/10 16:13
7439-95-4	Magnesium		61.6	185	308	1	UN	SW6010B	0L21008	12/22/10 16:13
7439-96-5	Manganese	0.806	0.185	0.370	0.924	1	J	SW6010B	0L21008	12/22/10 16:13
7440-02-0	Nickel	0.335	0.185	0.370	0.616	1	J	SW6010B	0L21008	12/22/10 16:13
7440-09-7	Potassium		61.6	185	308	1	UN	SW6010B	0L21008	12/22/10 16:13
7782-49-2	Selenium	0.318	0.300	0.185	0.308	1	UN	SW6010B	0L21008	12/22/10 16:13
7440-22-4	Silver		0.0616	0.123	0.616	1	U	SW6010B	0L21008	12/22/10 16:13
7440-23-5	Sodium		61.6	185	308	1	U	SW6010B	0L21008	12/22/10 16:13
7440-28-0	Thallium		0.246	0.246	0.493	1	UN	SW6010B	0L21008	12/22/10 16:13
7440-62-2	Vanadium	1.24	0.308	0.616	0.770	1		SW6010B	0L21008	12/22/10 16:13
7440-66-6	Zinc	1.18	0.308	0.616	1.23	1	UN	SW6010B	0L21008	12/22/10 16:13

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ANALYSIS DATA SHEET

MR17-IS03-3-5-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012060-07Sampled: 12/04/10 13:30Received: 12/07/10 08:40% Solids: 94.63

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0170	0.0129	0.0327	0.0330	1	J	SW7471A	0L21001	12/28/10 11:03
7429-90-5	Aluminum	1730	2.59	5.18	10.4	1		SW6010B	0L21008	12/22/10 16:18
7440-36-0	Antimony		0.259	0.414	0.518	1	UN ^R	SW6010B	0L21008	12/22/10 16:18
7440-38-2	Arsenic		0.155	0.311	0.518	1	U	SW6010B	0L21008	12/22/10 16:18
7440-39-3	Barium	2.12	0.259	0.518	2.07	1		SW6010B	0L21008	12/22/10 16:18
7440-41-7	Beryllium		0.0518	0.104	0.259	1	U	SW6010B	0L21008	12/22/10 16:18
7440-43-9	Cadmium		0.0518	0.104	0.259	1	U	SW6010B	0L21008	12/22/10 16:18
7440-70-2	Calcium		51.8	104	259	1	UN	SW6010B	0L21008	12/22/10 16:18
7440-47-3	Chromium	2.10	0.104	0.207	0.518	1	UN	SW6010B	0L21008	12/22/10 16:18
7440-48-4	Cobalt		0.259	0.518	0.648	1	U	SW6010B	0L21008	12/22/10 16:18
7440-50-8	Copper	0.409	0.207	0.414	0.518	1	J	SW6010B	0L21008	12/22/10 16:18
7439-89-6	Iron	209	1.55	3.11	5.18	1		SW6010B	0L21008	12/22/10 16:18
7439-92-1	Lead	1.97	0.0777	0.155	0.155	1		SW6010B	0L21008	12/22/10 16:18
7439-95-4	Magnesium		51.8	155	259	1	UN	SW6010B	0L21008	12/22/10 16:18
7439-96-5	Manganese	0.945	0.155	0.311	0.777	1		SW6010B	0L21008	12/22/10 16:18
7440-02-0	Nickel	0.366	0.155	0.311	0.518	1	J	SW6010B	0L21008	12/22/10 16:18
7440-09-7	Potassium		51.8	155	259	1	UN	SW6010B	0L21008	12/22/10 16:18
7782-49-2	Selenium	0.259	0.203	0.155	0.259	1	UN	SW6010B	0L21008	12/22/10 16:18
7440-22-4	Silver		0.0518	0.104	0.518	1	U	SW6010B	0L21008	12/22/10 16:18
7440-23-5	Sodium		51.8	155	259	1	U	SW6010B	0L21008	12/22/10 16:18
7440-28-0	Thallium		0.207	0.207	0.414	1	UN	SW6010B	0L21008	12/22/10 16:18
7440-62-2	Vanadium	1.45	0.259	0.518	0.648	1		SW6010B	0L21008	12/22/10 16:18
7440-66-6	Zinc	0.729	0.259	0.518	1.04	1	UN	SW6010B	0L21008	12/22/10 16:18

ANALYSIS DATA SHEET

MR17-IS02-4-6-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012060-08Sampled: 12/04/10 13:50Received: 12/07/10 08:40% Solids: 84.92

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0196	0.0158	0.0402	0.0402	1	J	SW7471A	0L21001	12/28/10 11:05
7429-90-5	Aluminum	6930	2.82	5.63	11.3	1		SW6010B	0L21008	12/22/10 16:23
7440-36-0	Antimony		0.282	0.451	0.563	1	11N* R	SW6010B	0L21008	12/22/10 16:23
7440-38-2	Arsenic	1.21	0.169	0.338	0.563	1		SW6010B	0L21008	12/22/10 16:23
7440-39-3	Barium	15.1	0.282	0.563	2.25	1		SW6010B	0L21008	12/22/10 16:23
7440-41-7	Beryllium	0.158	0.0563	0.113	0.282	1	J	SW6010B	0L21008	12/22/10 16:23
7440-43-9	Cadmium	0.129	0.0563	0.113	0.282	1	J	SW6010B	0L21008	12/22/10 16:23
7440-70-2	Calcium	2510	56.3	113	282	1	X JT	SW6010B	0L21008	12/22/10 16:23
7440-47-3	Chromium	15.3	0.113	0.225	0.563	1	X JT	SW6010B	0L21008	12/22/10 16:23
7440-48-4	Cobalt	0.397	0.282	0.563	0.704	1	J	SW6010B	0L21008	12/22/10 16:23
7440-50-8	Copper	1.66	0.225	0.451	0.563	1		SW6010B	0L21008	12/22/10 16:23
7439-89-6	Iron	6590	1.69	3.38	5.63	1		SW6010B	0L21008	12/22/10 16:23
7439-92-1	Lead	6.59	0.0845	0.169	0.169	1		SW6010B	0L21008	12/22/10 16:23
7439-95-4	Magnesium	309	56.3	169	282	1	X JT	SW6010B	0L21008	12/22/10 16:23
7439-96-5	Manganese	9.13	0.169	0.338	0.845	1		SW6010B	0L21008	12/22/10 16:23
7440-02-0	Nickel	1.68	0.169	0.338	0.563	1		SW6010B	0L21008	12/22/10 16:23
7440-09-7	Potassium	239	56.3	169	282	1	X JT	SW6010B	0L21008	12/22/10 16:23
7782-49-2	Selenium	0.660	0.169	0.282	0.563	1	B	SW6010B	0L21008	12/22/10 16:23
7440-22-4	Silver		0.113	0.113	0.563	1	X U	SW6010B	0L21008	12/22/10 16:23
7440-23-5	Sodium		56.3	169	282	1	U	SW6010B	0L21008	12/22/10 16:23
7440-28-0	Thallium		0.225	0.225	0.451	1	X U	SW6010B	0L21008	12/22/10 16:23
7440-62-2	Vanadium	15.7	0.282	0.563	0.704	1		SW6010B	0L21008	12/22/10 16:23
7440-66-6	Zinc	6.97	0.282	0.563	1.13	1		SW6010B	0L21008	12/22/10 16:23

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ANALYSIS DATA SHEET

MR17-IS01-2-4-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012060-09Sampled: 12/04/10 14:10Received: 12/07/10 08:40% Solids: 86.60

CAS NO.	Analyte	Conc. (mg/Kg dry)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0271	0.0145	0.0369	0.0369	1	J	SW7471A	0L21001	12/28/10 11:10
7429-90-5	Aluminum	2510	2.83	5.66	11.3	1		SW6010B	0L21008	12/22/10 16:27
7440-36-0	Antimony		0.283	0.453	0.566	1	UN R	SW6010B	0L21008	12/22/10 16:27
7440-38-2	Arsenic	0.198	0.170	0.340	0.566	1	J	SW6010B	0L21008	12/22/10 16:27
7440-39-3	Barium	3.09	0.283	0.566	2.26	1		SW6010B	0L21008	12/22/10 16:27
7440-41-7	Beryllium		0.0566	0.113	0.283	1	U	SW6010B	0L21008	12/22/10 16:27
7440-43-9	Cadmium		0.0566	0.113	0.283	1	U	SW6010B	0L21008	12/22/10 16:27
7440-70-2	Calcium	440	56.6	113	283	1	N JH	SW6010B	0L21008	12/22/10 16:27
7440-47-3	Chromium	2.60	0.113	0.226	0.566	1	N JH	SW6010B	0L21008	12/22/10 16:27
7440-48-4	Cobalt		0.283	0.566	0.708	1	U	SW6010B	0L21008	12/22/10 16:27
7440-50-8	Copper	0.398	0.226	0.453	0.566	1	J	SW6010B	0L21008	12/22/10 16:27
7439-89-6	Iron	345	1.70	3.40	5.66	1		SW6010B	0L21008	12/22/10 16:27
7439-92-1	Lead	2.59	0.0849	0.170	0.170	1		SW6010B	0L21008	12/22/10 16:27
7439-95-4	Magnesium		56.6	170	283	1	UN	SW6010B	0L21008	12/22/10 16:27
7439-96-5	Manganese	0.936	0.170	0.340	0.849	1		SW6010B	0L21008	12/22/10 16:27
7440-02-0	Nickel	0.805	0.170	0.340	0.566	1		SW6010B	0L21008	12/22/10 16:27
7440-09-7	Potassium		56.6	170	283	1	UN	SW6010B	0L21008	12/22/10 16:27
7782-49-2	Selenium	0.281	0.170	0.283	0.566	1	B U	SW6010B	0L21008	12/22/10 16:27
7440-22-4	Silver		0.0566	0.113	0.566	1	U	SW6010B	0L21008	12/22/10 16:27
7440-23-5	Sodium		56.6	170	283	1	U	SW6010B	0L21008	12/22/10 16:27
7440-28-0	Thallium		0.170	0.226	0.453	1	U	SW6010B	0L21008	12/22/10 16:27
7440-62-2	Vanadium	2.45	0.283	0.566	0.708	1		SW6010B	0L21008	12/22/10 16:27
7440-66-6	Zinc	1.25	0.283	0.566	1.13	1	B	SW6010B	0L21008	12/22/10 16:27

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ANALYSIS DATA SHEET

MR17-EB120410-IS

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012060-10Sampled: 12/04/10 16:30Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	0.200	1	U	SW7470A	0L17015	12/20/10 12:19
7429-90-5	Aluminum		12.5	25.0	50.0	1	U	SW6010B	0L20005	12/21/10 13:28
7440-36-0	Antimony		1.25	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 13:28
7440-38-2	Arsenic		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 13:28
7440-39-3	Barium		1.25	2.50	10.0	1	U	SW6010B	0L20005	12/21/10 13:28
7440-41-7	Beryllium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 13:28
7440-43-9	Cadmium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 13:28
7440-70-2	Calcium		250	500	1250	1	U	SW6010B	0L20005	12/21/10 13:28
7440-47-3	Chromium		0.500	1.00	2.50	1	U	SW6010B	0L20005	12/21/10 13:28
7440-48-4	Cobalt		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 13:28
7440-50-8	Copper		1.00	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 13:28
7439-89-6	Iron	14.6	7.50	15.0	25.0	1	U	SW6010B	0L20005	12/21/10 13:28
7439-92-1	Lead		0.375	0.750	0.750	1	U	SW6010B	0L20005	12/21/10 13:28
7439-95-4	Magnesium		250	750	1250	1	U	SW6010B	0L20005	12/21/10 13:28
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010B	0L20005	12/21/10 13:28
7440-02-0	Nickel		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 13:28
7440-09-7	Potassium		250	750	1250	1	U	SW6010B	0L20005	12/21/10 13:28
7782-49-2	Selenium		0.750	1.25	2.50	1	U	SW6010B	0L20005	12/21/10 13:28
7440-22-4	Silver		0.250	0.500	2.50	1	U	SW6010B	0L20005	12/21/10 13:28
7440-23-5	Sodium		250	750	1250	1	U	SW6010B	0L20005	12/21/10 13:28
7440-28-0	Thallium		0.750	1.00	2.00	1	U	SW6010B	0L20005	12/21/10 13:28
7440-62-2	Vanadium		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 13:28
7440-66-6	Zinc		1.25	2.50	5.00	1	U	SW6010B	0L20005	12/21/10 13:28

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ANALYSIS DATA SHEET

MR17-MW09-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: Ground WaterLaboratory ID: 1012060-11Sampled: 12/05/10 12:45Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	0.200	1	U	SW7470A	0L17015	12/20/10 12:20
7429-90-5	Aluminum	702	12.5	25.0	50.0	1	NJ	SW6010B	0L20005	12/21/10 13:32
7440-36-0	Antimony		1.25	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 13:32
7440-38-2	Arsenic		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 13:32
7440-39-3	Barium	20.3	1.25	2.50	10.0	1		SW6010B	0L20005	12/21/10 13:32
7440-41-7	Beryllium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 13:32
7440-43-9	Cadmium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 13:32
7440-70-2	Calcium	1340	250	500	1250	1		SW6010B	0L20005	12/21/10 13:32
7440-47-3	Chromium	1.93	0.500	1.00	2.50	1	J	SW6010B	0L20005	12/21/10 13:32
7440-48-4	Cobalt		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 13:32
7440-50-8	Copper		1.00	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 13:32
7439-89-6	Iron	208	7.50	15.0	25.0	1	NJ	SW6010B	0L20005	12/21/10 13:32
7439-92-1	Lead	0.577	0.375	0.750	0.750	1	J	SW6010B	0L20005	12/21/10 13:32
7439-95-4	Magnesium	492	250	750	1250	1	J	SW6010B	0L20005	12/21/10 13:32
7439-96-5	Manganese	13.5	0.750	1.50	3.75	1		SW6010B	0L20005	12/21/10 13:32
7440-02-0	Nickel	1.41	0.750	1.50	2.50	1	J	SW6010B	0L20005	12/21/10 13:32
7440-09-7	Potassium	435	250	750	1250	1	J	SW6010B	0L20005	12/21/10 13:32
7782-49-2	Selenium		0.750	1.25	2.50	1	U	SW6010B	0L20005	12/21/10 13:32
7440-22-4	Silver		0.250	0.500	2.50	1	U	SW6010B	0L20005	12/21/10 13:32
7440-23-5	Sodium	1940	250	750	1250	1		SW6010B	0L20005	12/21/10 13:32
7440-28-0	Thallium		0.750	1.00	2.00	1	U	SW6010B	0L20005	12/21/10 13:32
7440-62-2	Vanadium		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 13:32
7440-66-6	Zinc	41.5	1.25	2.50	5.00	1	NJ	SW6010B	0L20005	12/21/10 13:32

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ANALYSIS DATA SHEET

MR17-MW15-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: Ground WaterLaboratory ID: 1012060-13Sampled: 12/05/10 14:00Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	0.200	1	U	SW7470A	0L17015	12/20/10 12:26
7429-90-5	Aluminum	251	12.5	25.0	50.0	1	NJ	SW6010B	0L20005	12/21/10 13:55 <i>msl</i>
7440-36-0	Antimony		1.25	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 13:55
7440-38-2	Arsenic		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 13:55
7440-39-3	Barium	51.1	1.25	2.50	10.0	1		SW6010B	0L20005	12/21/10 13:55
7440-41-7	Beryllium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 13:55
7440-43-9	Cadmium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 13:55
7440-70-2	Calcium	18100	250	500	1250	1		SW6010B	0L20005	12/21/10 13:55
7440-47-3	Chromium	0.943	0.500	1.00	2.50	1	J	SW6010B	0L20005	12/21/10 13:55
7440-48-4	Cobalt		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 13:55
7440-50-8	Copper		1.00	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 13:55
7439-89-6	Iron	675	7.50	15.0	25.0	1	XJ	SW6010B	0L20005	12/21/10 13:55 <i>msl</i>
7439-92-1	Lead		0.375	0.750	0.750	1	U	SW6010B	0L20005	12/21/10 13:55
7439-95-4	Magnesium	2870	250	750	1250	1		SW6010B	0L20005	12/21/10 13:55
7439-96-5	Manganese	73.8	0.750	1.50	3.75	1		SW6010B	0L20005	12/21/10 13:55
7440-02-0	Nickel	0.924	0.750	1.50	2.50	1	J	SW6010B	0L20005	12/21/10 13:55
7440-09-7	Potassium	1890	250	750	1250	1		SW6010B	0L20005	12/21/10 13:55
7782-49-2	Selenium		0.750	1.25	2.50	1	U	SW6010B	0L20005	12/21/10 13:55
7440-22-4	Silver		0.250	0.500	2.50	1	U	SW6010B	0L20005	12/21/10 13:55
7440-23-5	Sodium	6360	250	750	1250	1		SW6010B	0L20005	12/21/10 13:55
7440-28-0	Thallium		0.750	1.00	2.00	1	U	SW6010B	0L20005	12/21/10 13:55
7440-62-2	Vanadium	3.85	1.25	2.50	3.12	1		SW6010B	0L20005	12/21/10 13:55
7440-66-6	Zinc		1.25	2.50	5.00	1	UJ	SW6010B	0L20005	12/21/10 13:55 <i>msl</i>

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ANALYSIS DATA SHEET

MR17-MW15D-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: Ground WaterLaboratory ID: 1012060-14Sampled: 12/05/10 14:05Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	0.200	1	U	SW7470A	0L17015	12/20/10 12:28
7429-90-5	Aluminum	258	12.5	25.0	50.0	1	NT	SW6010B	0L20005	12/21/10 14:00 <i>MS</i>
7440-36-0	Antimony		1.25	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:00
7440-38-2	Arsenic		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 14:00
7440-39-3	Barium	50.1	1.25	2.50	10.0	1		SW6010B	0L20005	12/21/10 14:00
7440-41-7	Beryllium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:00
7440-43-9	Cadmium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:00
7440-70-2	Calcium	17200	250	500	1250	1		SW6010B	0L20005	12/21/10 14:00
7440-47-3	Chromium	0.839	0.500	1.00	2.50	1	J	SW6010B	0L20005	12/21/10 14:00
7440-48-4	Cobalt		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:00
7440-50-8	Copper		1.00	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:00
7439-89-6	Iron	723	7.50	15.0	25.0	1	NT	SW6010B	0L20005	12/21/10 14:00 <i>MS</i>
7439-92-1	Lead	0.481	0.375	0.750	0.750	1	J	SW6010B	0L20005	12/21/10 14:00
7439-95-4	Magnesium	2880	250	750	1250	1		SW6010B	0L20005	12/21/10 14:00
7439-96-5	Manganese	74.5	0.750	1.50	3.75	1		SW6010B	0L20005	12/21/10 14:00
7440-02-0	Nickel	0.865	0.750	1.50	2.50	1	J	SW6010B	0L20005	12/21/10 14:00
7440-09-7	Potassium	1890	250	750	1250	1		SW6010B	0L20005	12/21/10 14:00
7782-49-2	Selenium		0.750	1.25	2.50	1	U	SW6010B	0L20005	12/21/10 14:00
7440-22-4	Silver		0.250	0.500	2.50	1	U	SW6010B	0L20005	12/21/10 14:00
7440-23-5	Sodium	6170	250	750	1250	1		SW6010B	0L20005	12/21/10 14:00
7440-28-0	Thallium		0.750	1.00	2.00	1	U	SW6010B	0L20005	12/21/10 14:00
7440-62-2	Vanadium	4.20	1.25	2.50	3.12	1		SW6010B	0L20005	12/21/10 14:00
7440-66-6	Zinc		1.25	2.50	5.00	1	NT	SW6010B	0L20005	12/21/10 14:00 <i>MS</i>

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ANALYSIS DATA SHEET

MR17-EB120510-MW

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012060-15Sampled: 12/05/10 15:00Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	0.200	1	U	SW7470A	0L17015	12/20/10 12:30
7429-90-5	Aluminum		12.5	25.0	50.0	1	U	SW6010B	0L20005	12/21/10 14:05
7440-36-0	Antimony		1.25	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:05
7440-38-2	Arsenic		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 14:05
7440-39-3	Barium		1.25	2.50	10.0	1	U	SW6010B	0L20005	12/21/10 14:05
7440-41-7	Beryllium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:05
7440-43-9	Cadmium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:05
7440-70-2	Calcium		250	500	1250	1	U	SW6010B	0L20005	12/21/10 14:05
7440-47-3	Chromium		0.500	1.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:05
7440-48-4	Cobalt		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:05
7440-50-8	Copper		1.00	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:05
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010B	0L20005	12/21/10 14:05
7439-92-1	Lead		0.375	0.750	0.750	1	U	SW6010B	0L20005	12/21/10 14:05
7439-95-4	Magnesium		250	750	1250	1	U	SW6010B	0L20005	12/21/10 14:05
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010B	0L20005	12/21/10 14:05
7440-02-0	Nickel		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 14:05
7440-09-7	Potassium		250	750	1250	1	U	SW6010B	0L20005	12/21/10 14:05
7782-49-2	Selenium		0.750	1.25	2.50	1	U	SW6010B	0L20005	12/21/10 14:05
7440-22-4	Silver		0.250	0.500	2.50	1	U	SW6010B	0L20005	12/21/10 14:05
7440-23-5	Sodium		250	750	1250	1	U	SW6010B	0L20005	12/21/10 14:05
7440-28-0	Thallium		0.750	1.00	2.00	1	U	SW6010B	0L20005	12/21/10 14:05
7440-62-2	Vanadium		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:05
7440-66-6	Zinc		1.25	2.50	5.00	1	U	SW6010B	0L20005	12/21/10 14:05

ANALYSIS DATA SHEET

MR17-MW14-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: Ground WaterLaboratory ID: 1012060-16Sampled: 12/06/10 08:10Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	0.200	1	U	SW7470A	0L17015	12/20/10 12:35
7429-90-5	Aluminum	136	12.5	25.0	50.0	1	NJ	SW6010B	0L20005	12/21/10 14:09 MS
7440-36-0	Antimony		1.25	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:09
7440-38-2	Arsenic		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 14:09
7440-39-3	Barium	81.0	1.25	2.50	10.0	1		SW6010B	0L20005	12/21/10 14:09
7440-41-7	Beryllium	0.261	0.250	0.500	1.25	1	J	SW6010B	0L20005	12/21/10 14:09
7440-43-9	Cadmium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:09
7440-70-2	Calcium	1930	250	500	1250	1		SW6010B	0L20005	12/21/10 14:09
7440-47-3	Chromium		0.500	1.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:09
7440-48-4	Cobalt	4.30	1.25	2.50	3.12	1		SW6010B	0L20005	12/21/10 14:09
7440-50-8	Copper		1.00	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:09
7439-89-6	Iron	177	7.50	15.0	25.0	1	NJ	SW6010B	0L20005	12/21/10 14:09 MS
7439-92-1	Lead		0.375	0.750	0.750	1	U	SW6010B	0L20005	12/21/10 14:09
7439-95-4	Magnesium	2000	250	750	1250	1		SW6010B	0L20005	12/21/10 14:09
7439-96-5	Manganese	43.9	0.750	1.50	3.75	1		SW6010B	0L20005	12/21/10 14:09
7440-02-0	Nickel	6.05	0.750	1.50	2.50	1		SW6010B	0L20005	12/21/10 14:09
7440-09-7	Potassium	1380	250	750	1250	1		SW6010B	0L20005	12/21/10 14:09
7782-49-2	Selenium		0.750	1.25	2.50	1	U	SW6010B	0L20005	12/21/10 14:09
7440-22-4	Silver		0.250	0.500	2.50	1	U	SW6010B	0L20005	12/21/10 14:09
7440-23-5	Sodium	8070	250	750	1250	1		SW6010B	0L20005	12/21/10 14:09
7440-28-0	Thallium		0.750	1.00	2.00	1	U	SW6010B	0L20005	12/21/10 14:09
7440-62-2	Vanadium		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:09
7440-66-6	Zinc	11.5	1.25	2.50	5.00	1	NJ	SW6010B	0L20005	12/21/10 14:09 MS

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ANALYSIS DATA SHEET

MR17-MW13-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: Ground WaterLaboratory ID: 1012060-17Sampled: 12/06/10 09:20Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	0.200	1	U	SW7470A	0L17015	12/20/10 12:36
7429-90-5	Aluminum	1280	12.5	25.0	50.0	1	NT	SW6010B	0L20005	12/21/10 14:14 <i>MS</i>
7440-36-0	Antimony		1.25	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:14
7440-38-2	Arsenic		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 14:14
7440-39-3	Barium	59.4	1.25	2.50	10.0	1		SW6010B	0L20005	12/21/10 14:14
7440-41-7	Beryllium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:14
7440-43-9	Cadmium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:14
7440-70-2	Calcium	8760	250	500	1250	1		SW6010B	0L20005	12/21/10 14:14
7440-47-3	Chromium		0.500	1.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:14
7440-48-4	Cobalt		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:14
7440-50-8	Copper		1.00	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:14
7439-89-6	Iron	47.3	7.50	15.0	25.0	1	NT	SW6010B	0L20005	12/21/10 14:14 <i>MS</i>
7439-92-1	Lead	1.22	0.375	0.750	0.750	1		SW6010B	0L20005	12/21/10 14:14
7439-95-4	Magnesium	3120	250	750	1250	1		SW6010B	0L20005	12/21/10 14:14
7439-96-5	Manganese	5.13	0.750	1.50	3.75	1		SW6010B	0L20005	12/21/10 14:14
7440-02-0	Nickel	0.782	0.750	1.50	2.50	1	J	SW6010B	0L20005	12/21/10 14:14
7440-09-7	Potassium	1310	250	750	1250	1		SW6010B	0L20005	12/21/10 14:14
7782-49-2	Selenium		0.750	1.25	2.50	1	U	SW6010B	0L20005	12/21/10 14:14
7440-22-4	Silver		0.250	0.500	2.50	1	U	SW6010B	0L20005	12/21/10 14:14
7440-23-5	Sodium	9010	250	750	1250	1		SW6010B	0L20005	12/21/10 14:14
7440-28-0	Thallium		0.750	1.00	2.00	1	U	SW6010B	0L20005	12/21/10 14:14
7440-62-2	Vanadium		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:14
7440-66-6	Zinc	2.95	1.25	2.50	5.00	1	NT	SW6010B	0L20005	12/21/10 14:14 <i>MS</i>

ANALYSIS DATA SHEET

MW17-MW10-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: Ground WaterLaboratory ID: 1012060-18Sampled: 12/06/10 11:20Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	0.200	1	U	SW7470A	0L17015	12/20/10 12:38
7429-90-5	Aluminum	295	12.5	25.0	50.0	1	XJ	SW6010B	0L20005	12/21/10 14:31 MS
7440-36-0	Antimony		1.25	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:31
7440-38-2	Arsenic		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 14:31
7440-39-3	Barium	33.0	1.25	2.50	10.0	1		SW6010B	0L20005	12/21/10 14:31
7440-41-7	Beryllium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:31
7440-43-9	Cadmium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:31
7440-70-2	Calcium	10800	250	500	1250	1		SW6010B	0L20005	12/21/10 14:31
7440-47-3	Chromium	0.643	0.500	1.00	2.50	1	J	SW6010B	0L20005	12/21/10 14:31
7440-48-4	Cobalt	1.28	1.25	2.50	3.12	1	J	SW6010B	0L20005	12/21/10 14:31
7440-50-8	Copper		1.00	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:31
7439-89-6	Iron	48.0	7.50	15.0	25.0	1	XJ	SW6010B	0L20005	12/21/10 14:31 MS
7439-92-1	Lead		0.375	0.750	0.750	1	U	SW6010B	0L20005	12/21/10 14:31
7439-95-4	Magnesium	648	250	750	1250	1	J	SW6010B	0L20005	12/21/10 14:31
7439-96-5	Manganese	36.9	0.750	1.50	3.75	1		SW6010B	0L20005	12/21/10 14:31
7440-02-0	Nickel	2.70	0.750	1.50	2.50	1		SW6010B	0L20005	12/21/10 14:31
7440-09-7	Potassium	571	250	750	1250	1	J	SW6010B	0L20005	12/21/10 14:31
7782-49-2	Selenium		0.750	1.25	2.50	1	U	SW6010B	0L20005	12/21/10 14:31
7440-22-4	Silver		0.250	0.500	2.50	1	U	SW6010B	0L20005	12/21/10 14:31
7440-23-5	Sodium	5980	250	750	1250	1		SW6010B	0L20005	12/21/10 14:31
7440-28-0	Thallium		0.750	1.00	2.00	1	U	SW6010B	0L20005	12/21/10 14:31
7440-62-2	Vanadium		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:31
7440-66-6	Zinc	3.35	1.25	2.50	5.00	1	XJ	SW6010B	0L20005	12/21/10 14:31 MS

SMK
12/21/10

ANALYSIS DATA SHEET

MW17-MW11-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: Ground WaterLaboratory ID: 1012060-19Sampled: 12/06/10 12:25Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	0.200	1	U	SW7470A	0L17015	12/20/10 12:40
7429-90-5	Aluminum	230	12.5	25.0	50.0	1	NJ	SW6010B	0L20005	12/21/10 14:36
7440-36-0	Antimony		1.25	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:36
7440-38-2	Arsenic		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 14:36
7440-39-3	Barium	20.9	1.25	2.50	10.0	1		SW6010B	0L20005	12/21/10 14:36
7440-41-7	Beryllium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:36
7440-43-9	Cadmium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:36
7440-70-2	Calcium	2260	250	500	1250	1		SW6010B	0L20005	12/21/10 14:36
7440-47-3	Chromium		0.500	1.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:36
7440-48-4	Cobalt		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:36
7440-50-8	Copper		1.00	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:36
7439-89-6	Iron	65.6	7.50	15.0	25.0	1	NJ	SW6010B	0L20005	12/21/10 14:36
7439-92-1	Lead		0.375	0.750	0.750	1	U	SW6010B	0L20005	12/21/10 14:36
7439-95-4	Magnesium	748	250	750	1250	1	J	SW6010B	0L20005	12/21/10 14:36
7439-96-5	Manganese	16.6	0.750	1.50	3.75	1		SW6010B	0L20005	12/21/10 14:36
7440-02-0	Nickel		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 14:36
7440-09-7	Potassium	395	250	750	1250	1	J	SW6010B	0L20005	12/21/10 14:36
7782-49-2	Selenium		0.750	1.25	2.50	1	U	SW6010B	0L20005	12/21/10 14:36
7440-22-4	Silver		0.250	0.500	2.50	1	U	SW6010B	0L20005	12/21/10 14:36
7440-23-5	Sodium	3690	250	750	1250	1		SW6010B	0L20005	12/21/10 14:36
7440-28-0	Thallium		0.750	1.00	2.00	1	U	SW6010B	0L20005	12/21/10 14:36
7440-62-2	Vanadium		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:36
7440-66-6	Zinc	3.03	1.25	2.50	5.00	1	NJ	SW6010B	0L20005	12/21/10 14:36

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12/21/10

ANALYSIS DATA SHEET

MW17-MW12-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: Ground WaterLaboratory ID: 1012060-20Sampled: 12/06/10 13:25Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	0.200	1	U	SW7470A	0L17015	12/20/10 12:42
7429-90-5	Aluminum	2000	12.5	25.0	50.0	1	NJ	SW6010B	0L20005	12/21/10 14:41 <i>MS</i>
7440-36-0	Antimony		1.25	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:41
7440-38-2	Arsenic		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 14:41
7440-39-3	Barium	33.3	1.25	2.50	10.0	1		SW6010B	0L20005	12/21/10 14:41
7440-41-7	Beryllium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:41
7440-43-9	Cadmium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:41
7440-70-2	Calcium	28900	250	500	1250	1		SW6010B	0L20005	12/21/10 14:41
7440-47-3	Chromium	5.22	0.500	1.00	2.50	1		SW6010B	0L20005	12/21/10 14:41
7440-48-4	Cobalt		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:41
7440-50-8	Copper	2.51	1.00	2.00	2.50	1		SW6010B	0L20005	12/21/10 14:41
7439-89-6	Iron	345	7.50	15.0	25.0	1	NJ	SW6010B	0L20005	12/21/10 14:41 <i>MS</i>
7439-92-1	Lead	1.30	0.375	0.750	0.750	1		SW6010B	0L20005	12/21/10 14:41
7439-95-4	Magnesium	3460	250	750	1250	1		SW6010B	0L20005	12/21/10 14:41
7439-96-5	Manganese	80.8	0.750	1.50	3.75	1		SW6010B	0L20005	12/21/10 14:41
7440-02-0	Nickel	2.13	0.750	1.50	2.50	1	J	SW6010B	0L20005	12/21/10 14:41
7440-09-7	Potassium	3660	250	750	1250	1		SW6010B	0L20005	12/21/10 14:41
7782-49-2	Selenium	0.920	0.750	1.25	2.50	1	J	SW6010B	0L20005	12/21/10 14:41
7440-22-4	Silver		0.250	0.500	2.50	1	U	SW6010B	0L20005	12/21/10 14:41
7440-23-5	Sodium	4730	250	750	1250	1		SW6010B	0L20005	12/21/10 14:41
7440-28-0	Thallium		0.750	1.00	2.00	1	U	SW6010B	0L20005	12/21/10 14:41
7440-62-2	Vanadium	4.33	1.25	2.50	3.12	1		SW6010B	0L20005	12/21/10 14:41
7440-66-6	Zinc	1.49	1.25	2.50	5.00	1	NJ	SW6010B	0L20005	12/21/10 14:41 <i>MS</i>

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ANALYSIS DATA SHEET

MW17-EB120610-MW

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012060-21Sampled: 12/06/10 13:45Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	0.200	1	U	SW7470A	0L17016	12/20/10 12:47
7429-90-5	Aluminum		12.5	25.0	50.0	1	UN	SW6010B	0L20005	12/21/10 14:45
7440-36-0	Antimony		1.25	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:45
7440-38-2	Arsenic		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 14:45
7440-39-3	Barium		1.25	2.50	10.0	1	U	SW6010B	0L20005	12/21/10 14:45
7440-41-7	Beryllium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:45
7440-43-9	Cadmium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:45
7440-70-2	Calcium		250	500	1250	1	U	SW6010B	0L20005	12/21/10 14:45
7440-47-3	Chromium		0.500	1.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:45
7440-48-4	Cobalt		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:45
7440-50-8	Copper		1.00	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:45
7439-89-6	Iron		7.50	15.0	25.0	1	UN	SW6010B	0L20005	12/21/10 14:45
7439-92-1	Lead		0.375	0.750	0.750	1	U	SW6010B	0L20005	12/21/10 14:45
7439-95-4	Magnesium		250	750	1250	1	U	SW6010B	0L20005	12/21/10 14:45
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010B	0L20005	12/21/10 14:45
7440-02-0	Nickel		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 14:45
7440-09-7	Potassium		250	750	1250	1	U	SW6010B	0L20005	12/21/10 14:45
7782-49-2	Selenium		0.750	1.25	2.50	1	U	SW6010B	0L20005	12/21/10 14:45
7440-22-4	Silver		0.250	0.500	2.50	1	U	SW6010B	0L20005	12/21/10 14:45
7440-23-5	Sodium		250	750	1250	1	U	SW6010B	0L20005	12/21/10 14:45
7440-28-0	Thallium		0.750	1.00	2.00	1	U	SW6010B	0L20005	12/21/10 14:45
7440-62-2	Vanadium		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:45
7440-66-6	Zinc		1.25	2.50	5.00	1	UN	SW6010B	0L20005	12/21/10 14:45

ANALYSIS DATA SHEET

MW17-FB120610-10D

Laboratory: Empirical Laboratories, LLC

SDG: 1012060

Client: CH2M Hill, Inc.

Project: Lejeune CTO-141 UXO-17

Matrix: Water

Laboratory ID: 1012060-22

Sampled: 12/06/10 14:00

Received: 12/07/10 08:40

% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	0.200	1	U	SW7470A	0L17016	12/20/10 12:49
7429-90-5	Aluminum		12.5	25.0	50.0	1	U	SW6010B	0L20005	12/21/10 14:50
7440-36-0	Antimony		1.25	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:50
7440-38-2	Arsenic		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 14:50
7440-39-3	Barium		1.25	2.50	10.0	1	U	SW6010B	0L20005	12/21/10 14:50
7440-41-7	Beryllium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:50
7440-43-9	Cadmium		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:50
7440-70-2	Calcium		250	500	1250	1	U	SW6010B	0L20005	12/21/10 14:50
7440-47-3	Chromium		0.500	1.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:50
7440-48-4	Cobalt		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:50
7440-50-8	Copper		1.00	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:50
7439-89-6	Iron		7.50	15.0	25.0	1	U	SW6010B	0L20005	12/21/10 14:50
7439-92-1	Lead		0.375	0.750	0.750	1	U	SW6010B	0L20005	12/21/10 14:50
7439-95-4	Magnesium		250	750	1250	1	U	SW6010B	0L20005	12/21/10 14:50
7439-96-5	Manganese		0.750	1.50	3.75	1	U	SW6010B	0L20005	12/21/10 14:50
7440-02-0	Nickel		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 14:50
7440-09-7	Potassium		250	750	1250	1	U	SW6010B	0L20005	12/21/10 14:50
7782-49-2	Selenium		0.750	1.25	2.50	1	U	SW6010B	0L20005	12/21/10 14:50
7440-22-4	Silver		0.250	0.500	2.50	1	U	SW6010B	0L20005	12/21/10 14:50
7440-23-5	Sodium		250	750	1250	1	U	SW6010B	0L20005	12/21/10 14:50
7440-28-0	Thallium		0.750	1.00	2.00	1	U	SW6010B	0L20005	12/21/10 14:50
7440-62-2	Vanadium		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:50
7440-66-6	Zinc		1.25	2.50	5.00	1	U	SW6010B	0L20005	12/21/10 14:50

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ANALYSIS DATA SHEET

MW17-MW10-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: Ground WaterLaboratory ID: 1012060-23Sampled: 12/06/10 11:20Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury (dissolved)		0.0800	0.200	0.200	1	U	SW7470A	0L17016	12/20/10 12:51
7429-90-5	Aluminum (dissolved)	141	12.5	25.0	50.0	1	U	SW6010B	0L20005	12/21/10 14:55
7440-36-0	Antimony (dissolved)		1.25	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:55
7440-38-2	Arsenic (dissolved)		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 14:55
7440-39-3	Barium (dissolved)	31.2	1.25	2.50	10.0	1		SW6010B	0L20005	12/21/10 14:55
7440-41-7	Beryllium (dissolved)		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:55
7440-43-9	Cadmium (dissolved)		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:55
7440-70-2	Calcium (dissolved)	11100	250	500	1250	1		SW6010B	0L20005	12/21/10 14:55
7440-47-3	Chromium (dissolved)	0.616	0.500	1.00	2.50	1	J	SW6010B	0L20005	12/21/10 14:55
7440-48-4	Cobalt (dissolved)		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:55
7440-50-8	Copper (dissolved)		1.00	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:55
7439-89-6	Iron (dissolved)	17.3	7.50	15.0	25.0	1	U	SW6010B	0L20005	12/21/10 14:55
7439-92-1	Lead (dissolved)		0.375	0.750	0.750	1	U	SW6010B	0L20005	12/21/10 14:55
7439-95-4	Magnesium (dissolved)	670	250	750	1250	1	J	SW6010B	0L20005	12/21/10 14:55
7439-96-5	Manganese (dissolved)	30.4	0.750	1.50	3.75	1		SW6010B	0L20005	12/21/10 14:55
7440-02-0	Nickel (dissolved)	2.35	0.750	1.50	2.50	1	J	SW6010B	0L20005	12/21/10 14:55
7440-09-7	Potassium (dissolved)	526	250	750	1250	1	J	SW6010B	0L20005	12/21/10 14:55
7782-49-2	Selenium (dissolved)		0.750	1.25	2.50	1	U	SW6010B	0L20005	12/21/10 14:55
7440-22-4	Silver (dissolved)		0.250	0.500	2.50	1	U	SW6010B	0L20005	12/21/10 14:55
7440-23-5	Sodium (dissolved)	6030	250	750	1250	1		SW6010B	0L20005	12/21/10 14:55
7440-28-0	Thallium (dissolved)		0.750	1.00	2.00	1	U	SW6010B	0L20005	12/21/10 14:55
7440-62-2	Vanadium (dissolved)		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:55
7440-66-6	Zinc (dissolved)	3.47	1.25	2.50	5.00	1	U	SW6010B	0L20005	12/21/10 14:55

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ANALYSIS DATA SHEET

MW17-MW11-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: Ground WaterLaboratory ID: 1012060-24Sampled: 12/06/10 12:25Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury (dissolved)		0.0800	0.200	0.200	1	U	SW7470A	0L17016	12/20/10 12:56
7429-90-5	Aluminum (dissolved)	124	12.5	25.0	50.0	1	XJ	SW6010B	0L20005	12/21/10 14:59 <i>MS</i>
7440-36-0	Antimony (dissolved)		1.25	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:59
7440-38-2	Arsenic (dissolved)		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 14:59
7440-39-3	Barium (dissolved)	24.3	1.25	2.50	10.0	1		SW6010B	0L20005	12/21/10 14:59
7440-41-7	Beryllium (dissolved)		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:59
7440-43-9	Cadmium (dissolved)		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 14:59
7440-70-2	Calcium (dissolved)	2810	250	500	1250	1		SW6010B	0L20005	12/21/10 14:59
7440-47-3	Chromium (dissolved)	0.642	0.500	1.00	2.50	1	J	SW6010B	0L20005	12/21/10 14:59
7440-48-4	Cobalt (dissolved)		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:59
7440-50-8	Copper (dissolved)		1.00	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 14:59
7439-89-6	Iron (dissolved)	46.6	7.50	15.0	25.0	1	XJ	SW6010B	0L20005	12/21/10 14:59 <i>MS</i>
7439-92-1	Lead (dissolved)		0.375	0.750	0.750	1	U	SW6010B	0L20005	12/21/10 14:59
7439-95-4	Magnesium (dissolved)	905	250	750	1250	1	J	SW6010B	0L20005	12/21/10 14:59
7439-96-5	Manganese (dissolved)	18.7	0.750	1.50	3.75	1		SW6010B	0L20005	12/21/10 14:59
7440-02-0	Nickel (dissolved)	1.22	0.750	1.50	2.50	1	J	SW6010B	0L20005	12/21/10 14:59
7440-09-7	Potassium (dissolved)	481	250	750	1250	1	J	SW6010B	0L20005	12/21/10 14:59
7782-49-2	Selenium (dissolved)	0.825	0.750	1.25	2.50	1	J	SW6010B	0L20005	12/21/10 14:59
7440-22-4	Silver (dissolved)		0.250	0.500	2.50	1	U	SW6010B	0L20005	12/21/10 14:59
7440-23-5	Sodium (dissolved)	4350	250	750	1250	1		SW6010B	0L20005	12/21/10 14:59
7440-28-0	Thallium (dissolved)		0.750	1.00	2.00	1	U	SW6010B	0L20005	12/21/10 14:59
7440-62-2	Vanadium (dissolved)		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 14:59
7440-66-6	Zinc (dissolved)	3.22	1.25	2.50	5.00	1	XJ	SW6010B	0L20005	12/21/10 14:59 <i>MS</i>

MS
12/21/10

ANALYSIS DATA SHEET

MW17-MW12-10D

Laboratory: Empirical Laboratories, LLC

SDG: 1012060

Client: CH2M Hill, Inc.

Project: Lejeune CTO-141 UXO-17

Matrix: Ground Water

Laboratory ID: 1012060-25

Sampled: 12/06/10 13:25

Received: 12/07/10 08:40

% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury (dissolved)		0.0800	0.200	0.200	1	U	SW7470A	0L17016	12/20/10 12:58
7429-90-5	Aluminum (dissolved)	179	12.5	25.0	50.0	1	XJ	SW6010B	0L20005	12/21/10 15:04
7440-36-0	Antimony (dissolved)		1.25	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 15:04
7440-38-2	Arsenic (dissolved)		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 15:04
7440-39-3	Barium (dissolved)	30.1	1.25	2.50	10.0	1		SW6010B	0L20005	12/21/10 15:04
7440-41-7	Beryllium (dissolved)		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 15:04
7440-43-9	Cadmium (dissolved)		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 15:04
7440-70-2	Calcium (dissolved)	29600	250	500	1250	1		SW6010B	0L20005	12/21/10 15:04
7440-47-3	Chromium (dissolved)	1.53	0.500	1.00	2.50	1	J	SW6010B	0L20005	12/21/10 15:04
7440-48-4	Cobalt (dissolved)		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 15:04
7440-50-8	Copper (dissolved)	2.57	1.00	2.00	2.50	1		SW6010B	0L20005	12/21/10 15:04
7439-89-6	Iron (dissolved)	31.6	7.50	15.0	25.0	1	XJ	SW6010B	0L20005	12/21/10 15:04
7439-92-1	Lead (dissolved)	0.492	0.375	0.750	0.750	1	J	SW6010B	0L20005	12/21/10 15:04
7439-95-4	Magnesium (dissolved)	3430	250	750	1250	1		SW6010B	0L20005	12/21/10 15:04
7439-96-5	Manganese (dissolved)	78.0	0.750	1.50	3.75	1		SW6010B	0L20005	12/21/10 15:04
7440-02-0	Nickel (dissolved)	1.19	0.750	1.50	2.50	1	J	SW6010B	0L20005	12/21/10 15:04
7440-09-7	Potassium (dissolved)	3530	250	750	1250	1		SW6010B	0L20005	12/21/10 15:04
7782-49-2	Selenium (dissolved)		0.750	1.25	2.50	1	U	SW6010B	0L20005	12/21/10 15:04
7440-22-4	Silver (dissolved)		0.250	0.500	2.50	1	U	SW6010B	0L20005	12/21/10 15:04
7440-23-5	Sodium (dissolved)	4800	250	750	1250	1		SW6010B	0L20005	12/21/10 15:04
7440-28-0	Thallium (dissolved)		0.750	1.00	2.00	1	U	SW6010B	0L20005	12/21/10 15:04
7440-62-2	Vanadium (dissolved)	2.39	1.25	2.50	3.12	1	J	SW6010B	0L20005	12/21/10 15:04
7440-66-6	Zinc (dissolved)		1.25	2.50	5.00	1	UXJ	SW6010B	0L20005	12/21/10 15:04

SMS
2/21/2011

ANALYSIS DATA SHEET

MW17-EB120610-MW

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012060-26Sampled: 12/06/10 13:45Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury (dissolved)		0.0800	0.200	0.200	1	U	SW7470A	0L17016	12/20/10 13:03
7429-90-5	Aluminum (dissolved)		12.5	25.0	50.0	1	U	SW6010B	0L20005	12/21/10 15:08
7440-36-0	Antimony (dissolved)		1.25	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 15:08
7440-38-2	Arsenic (dissolved)		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 15:08
7440-39-3	Barium (dissolved)		1.25	2.50	10.0	1	U	SW6010B	0L20005	12/21/10 15:08
7440-41-7	Beryllium (dissolved)		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 15:08
7440-43-9	Cadmium (dissolved)		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 15:08
7440-70-2	Calcium (dissolved)		250	500	1250	1	U	SW6010B	0L20005	12/21/10 15:08
7440-47-3	Chromium (dissolved)		0.500	1.00	2.50	1	U	SW6010B	0L20005	12/21/10 15:08
7440-48-4	Cobalt (dissolved)		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 15:08
7440-50-8	Copper (dissolved)		1.00	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 15:08
7439-89-6	Iron (dissolved)		7.50	15.0	25.0	1	U	SW6010B	0L20005	12/21/10 15:08
7439-92-1	Lead (dissolved)		0.375	0.750	0.750	1	U	SW6010B	0L20005	12/21/10 15:08
7439-95-4	Magnesium (dissolved)		250	750	1250	1	U	SW6010B	0L20005	12/21/10 15:08
7439-96-5	Manganese (dissolved)		0.750	1.50	3.75	1	U	SW6010B	0L20005	12/21/10 15:08
7440-02-0	Nickel (dissolved)		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 15:08
7440-09-7	Potassium (dissolved)		250	750	1250	1	U	SW6010B	0L20005	12/21/10 15:08
7782-49-2	Selenium (dissolved)		0.750	1.25	2.50	1	U	SW6010B	0L20005	12/21/10 15:08
7440-22-4	Silver (dissolved)		0.250	0.500	2.50	1	U	SW6010B	0L20005	12/21/10 15:08
7440-23-5	Sodium (dissolved)		250	750	1250	1	U	SW6010B	0L20005	12/21/10 15:08
7440-28-0	Thallium (dissolved)		0.750	1.00	2.00	1	U	SW6010B	0L20005	12/21/10 15:08
7440-62-2	Vanadium (dissolved)		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 15:08
7440-66-6	Zinc (dissolved)		1.25	2.50	5.00	1	U	SW6010B	0L20005	12/21/10 15:08

SM
12/21/10

ANALYSIS DATA SHEET

MW17-FB120610-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012060-27Sampled: 12/06/10 14:00Received: 12/07/10 08:40% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury (dissolved)		0.0800	0.200	0.200	1	U	SW7470A	0L17016	12/20/10 13:05
7429-90-5	Aluminum (dissolved)		12.5	25.0	50.0	1	U	SW6010B	0L20005	12/21/10 15:13
7440-36-0	Antimony (dissolved)		1.25	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 15:13
7440-38-2	Arsenic (dissolved)		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 15:13
7440-39-3	Barium (dissolved)		1.25	2.50	10.0	1	U	SW6010B	0L20005	12/21/10 15:13
7440-41-7	Beryllium (dissolved)		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 15:13
7440-43-9	Cadmium (dissolved)		0.250	0.500	1.25	1	U	SW6010B	0L20005	12/21/10 15:13
7440-70-2	Calcium (dissolved)		250	500	1250	1	U	SW6010B	0L20005	12/21/10 15:13
7440-47-3	Chromium (dissolved)		0.500	1.00	2.50	1	U	SW6010B	0L20005	12/21/10 15:13
7440-48-4	Cobalt (dissolved)		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 15:13
7440-50-8	Copper (dissolved)		1.00	2.00	2.50	1	U	SW6010B	0L20005	12/21/10 15:13
7439-89-6	Iron (dissolved)		7.50	15.0	25.0	1	U	SW6010B	0L20005	12/21/10 15:13
7439-92-1	Lead (dissolved)	0.380	0.375	0.750	0.750	1	J	SW6010B	0L20005	12/21/10 15:13
7439-95-4	Magnesium (dissolved)		250	750	1250	1	U	SW6010B	0L20005	12/21/10 15:13
7439-96-5	Manganese (dissolved)		0.750	1.50	3.75	1	U	SW6010B	0L20005	12/21/10 15:13
7440-02-0	Nickel (dissolved)		0.750	1.50	2.50	1	U	SW6010B	0L20005	12/21/10 15:13
7440-09-7	Potassium (dissolved)		250	750	1250	1	U	SW6010B	0L20005	12/21/10 15:13
7782-49-2	Selenium (dissolved)		0.750	1.25	2.50	1	U	SW6010B	0L20005	12/21/10 15:13
7440-22-4	Silver (dissolved)		0.250	0.500	2.50	1	U	SW6010B	0L20005	12/21/10 15:13
7440-23-5	Sodium (dissolved)		250	750	1250	1	U	SW6010B	0L20005	12/21/10 15:13
7440-28-0	Thallium (dissolved)		0.750	1.00	2.00	1	U	SW6010B	0L20005	12/21/10 15:13
7440-62-2	Vanadium (dissolved)		1.25	2.50	3.12	1	U	SW6010B	0L20005	12/21/10 15:13
7440-66-6	Zinc (dissolved)	3.28	1.25	2.50	5.00	1	J	SW6010B	0L20005	12/21/10 15:13

Project: MCB Camp Lejeune (CTO-141), Jacksonville, NC
Laboratory: Empirical Laboratories, LLC
Sample Delivery Group: 1012017
Fraction: Organic
Matrix: Aqueous
Report Date: 2/21/2011

This analytical quality assurance report is based upon a review of analytical data generated for groundwater samples. One equipment blank, one field duplicate sample, and one matrix spike/matrix spike duplicate were submitted with the samples in this SDG. The sample locations, laboratory identification numbers, sample collection dates, sample matrix, and analyses performed are presented in Table 1.

The samples were analyzed for explosive compounds and perchlorate. The sample analyses were performed in accordance with the procedures outlined in "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997

All sample analyses have undergone an analytical quality assurance review to ensure adherence to the required protocols. Results have been validated or qualified according to general guidance provided in the "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", OSWER 9240.1-45 EPA 540-R-04-004, October 1999, and "Data Validation Standard Operating Procedures for Contract Laboratory Program Routine Analytical Services", USEPA Region IV, Revision 2.1, July 1999.

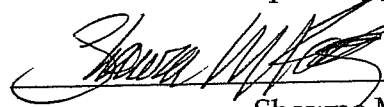
This document specifies procedures for validating data generated for CLP analyses. Therefore, the quality control requirements specified in the methods and associated acceptance criteria were also used to evaluate the non-CLP data. The parameters presented on the following page were evaluated.


-
- | | | |
|---|---|--|
| X | • | Data Completeness |
| X | • | Chain of Custody Documentation |
| X | • | Holding Times |
| X | • | Instrument Performance |
| X | • | Initial and Continuing Calibrations |
| X | • | Laboratory and Field Blank Analysis Results |
| X | • | Surrogate Compound Recoveries |
| X | • | Matrix Spike/Matrix Spike Duplicate Recoveries and Reproducibility |
| X | • | Field Duplicate Analysis Results |
| X | • | Laboratory Control Sample Results |
| X | • | Internal Standard Performance |
| X | • | Qualitative Identification |
| X | • | Quantitation/Reporting Limits |
-

X - Denotes parameter evaluated.

It is recommended that the data only be used according to the qualifiers presented, and discussed in this report. All other data should be considered qualitatively and quantitatively valid as reported by the laboratory, based on the items evaluated.

Report Approved By:


Shawne M. Rodgers
President


Date

1.0 DATA COMPLETENESS

The data package was complete.

2.0 CHAIN OF CUSTODY DOCUMENTATION

The chain of custody documentation was complete.

3.0 HOLDING TIMES

All criteria were met. No qualifiers were applied.

4.0 INSTRUMENT PERFORMANCE

All criteria were met. No qualifiers were applied.

5.0 INITIAL AND CONTINUING CALIBRATIONS

All criteria were met. No qualifiers were applied.

6.0 LABORATORY AND FIELD BLANK ANALYSIS RESULTS

All criteria were met. No qualifiers were applied.

7.0 SURROGATE COMPOUNDS

All criteria were met. No qualifiers were applied.

8.0 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND REPRODUCIBILITY

All criteria were met. No qualifiers were applied.

9.0 FIELD DUPLICATE RESULTS

Duplicate samples MR17-DU02-SS02-10D and MR17-DU02D-SS03-10D were submitted to the laboratory evaluate sampling and analytical precision for those analytes determined to be present. There were no positive results for the duplicate samples.

10.0 LABORATORY CONTROL SAMPLE RESULTS

All criteria were met. No qualifiers were applied.

11.0 INTERNAL STANDARD PERFORMANCE

All criteria were met. No qualifiers were applied.

12.0 QUALITATIVE IDENTIFICATION

All criteria were met. No qualifiers were applied.

13.0 QUANTITATION/REPORTING LIMITS

A lack of precision (greater than 40 %, but less than 70 % difference between results) was observed for the following explosive compounds on the dual chromatographic columns used for sample analysis. The laboratory for reporting purposes used the lower concentration for these compounds. Results less than the Reporting Limit (RL) been marked with "J" qualifiers to indicate that they are quantitative estimates. Results greater than the RL are marked "N".

Sample	Affected Compound
MR17-DU03-SS02-10D	RDX

Poor precision (greater than 70 % difference between results) was observed for the explosive compounds presented in Table 2 on the dual

chromatographic columns used for sample analysis. As required by USEPA protocol, the laboratory for reporting purposes used the lower concentration for these compounds. The positive explosive results that are less than the RL should be considered non-detected at the RL. Affected sample results less than the limit of detection (LOD) were replaced by this numeric value and marked "U". Sample results greater than the LOD, but less than the RL, were marked "U".

As required by USEPA protocol, all compounds, which were qualitatively identified at concentrations below their respective RLs, have been marked with "J" qualifiers to indicate that they are quantitative estimates.

METHODOLOGY REFERENCES

Analysis	Reference
Explosive Compounds	Method 8330, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997
Nitroglycerin and PETN	Method 8332, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997
Perchlorate	Method 6850, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997

Table 1 Samples For Data Validation Review
MCB Camp Lejeune, North Carolina (CTO-141)

SAMPLE I.D.	LABORATORY ID	SDG	DATE COLLECTED	ANALYSES PERFORMED				
				MATRIX	8330	6850	6010B	7470A
Sample_Name	Lab_Sample_ID	SDG	Date/Time_Collected	Total Of SDG	8330	6850	6010B	7470A
MR17-DU03-SS01-10D	1012017-01	1012017	11/30/2010 12:45	Soil	X	X	X	7471A
MR17-DU03-SS02-10D	1012017-02	1012017	11/30/2010 13:05	Soil	X	X	X	X
MR17-DU03-SS03-10D	1012017-03	1012017	11/30/2010 13:20	Soil	X	X	X	X
MR17-DU02-SS01-10D	1012017-04	1012017	11/30/2010 13:35	Soil	X	X	X	X
MR17-DU02-SS02-10D	1012017-05	1012017	11/30/2010 13:40	Soil	X	X	X	X
MR17-DU02D-SS03-10D	1012017-06	1012017	11/30/2010 13:55	Soil	X	X	X	X
MR17-DU02-SS03-10D	1012017-07	1012017	11/30/2010 13:50	Soil	X	X	X	X
MR17-DU01-SS01-10D	1012017-08	1012017	11/30/2010 14:20	Soil	X	X	X	X
MR17-DU01-SS02-10D	1012017-09	1012017	11/30/2010 14:25	Soil	X	X	X	X
MR17-DU01-SS03-10D	1012017-10	1012017	11/30/2010 14:30	Soil	X	X	X	X
MR17-EB-113010	1012017-11	1012017	11/30/2010 15:30	Equipment Blank	X	X	X	X

Table 2

Explosives Results Qualified Due to Dual Column Imprecision

Sample	Affected Compounds
MR17-DU03-SS01-10D	RDX, Tetryl
MR17-DU03-SS03-10D	1,3,5-Trinitrobenzen, 2-Amino, 4,6-dinitrotoluene, 2-Nitrotoluene, 4-
MR17-DU02-SS01-10D	Amino-2,6-dinitrotoluene, 4-Nitrotoluene, HMX, RDX
MR17-DU02-SS02-10D	Tetryl
	RDX

ANALYSIS DATA SHEET

MR17-DUO3-SS01-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012017-01 File ID: 119V1901.D
 Sampled: 11/30/10 12:45 Prepared: 12/02/10 17:55 Analyzed: 12/07/10 03:35
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L01026 Sequence: 0L34115 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0198	0.0396	0.0594	U
99-65-0	1,3-Dinitrobenzene		0.0198	0.0396	0.0594	U
118-96-7	2,4,6-Trinitrotoluene		0.0198	0.0396	0.0594	U
121-14-2	2,4-Dinitrotoluene		0.0198	0.0396	0.0594	U
606-20-2	2,6-Dinitrotoluene		0.0198	0.0396	0.0594	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0198	0.0396	0.0594	U
88-72-2	2-Nitrotoluene		0.0198	0.0396	0.0594	U
99-08-1	3-Nitrotoluene		0.0198	0.0396	0.0594	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0198	0.0396	0.0594	U
99-99-0	4-Nitrotoluene		0.0198	0.0396	0.0594	U
2691-41-0	HMX		0.0198	0.0396	0.0594	U
98-95-3	Nitrobenzene		0.0198	0.0396	0.0594	U
55-63-0	Nitroglycerin		0.0990	0.198	0.297	U
78-11-5	PETN		0.0990	0.198	0.297	U
121-82-4	RDX [2C]	0.0550	0.0198	0.0396	0.0594	JPM U
479-45-8	Tetryl	0.0227	0.0198	0.0396	0.0594	JPM U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1980	0.2218	112	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1980	0.2190	111	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-DUO3-SS02-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012017-02 File ID: 120V2001.D
 Sampled: 11/30/10 13:05 Prepared: 12/02/10 17:55 Analyzed: 12/07/10 04:08
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L01026 Sequence: 0L34115 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0198	0.0396	0.0594	U
99-65-0	1,3-Dinitrobenzene		0.0198	0.0396	0.0594	U
118-96-7	2,4,6-Trinitrotoluene		0.0198	0.0396	0.0594	U
121-14-2	2,4-Dinitrotoluene		0.0198	0.0396	0.0594	U
606-20-2	2,6-Dinitrotoluene		0.0198	0.0396	0.0594	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0198	0.0396	0.0594	U
88-72-2	2-Nitrotoluene		0.0198	0.0396	0.0594	U
99-08-1	3-Nitrotoluene		0.0198	0.0396	0.0594	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0198	0.0396	0.0594	U
99-99-0	4-Nitrotoluene		0.0198	0.0396	0.0594	U
2691-41-0	HMX		0.0198	0.0396	0.0594	U
98-95-3	Nitrobenzene		0.0198	0.0396	0.0594	U
55-63-0	Nitroglycerin		0.0990	0.198	0.297	U
78-11-5	PETN		0.0990	0.198	0.297	U
121-82-4	RDX		0.0198	0.0396	0.0594	U
479-45-8	Tetryl		0.0198	0.0396	0.0594	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1980	0.2235	113	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1980	0.2141	108	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-DUO3-SS03-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012017-03 File ID: 014V1401.D
 Sampled: 11/30/10 13:20 Prepared: 12/02/10 17:55 Analyzed: 12/07/10 04:40
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L01026 Sequence: 0L34115 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene [2C]	0.232	0.0196	0.0392	0.0588	PM U 2C
99-65-0	1,3-Dinitrobenzene		0.0196	0.0392	0.0588	U
118-96-7	2,4,6-Trinitrotoluene		0.0196	0.0392	0.0588	U
121-14-2	2,4-Dinitrotoluene		0.0196	0.0392	0.0588	U
606-20-2	2,6-Dinitrotoluene		0.0196	0.0392	0.0588	U
35572-78-2	2-Amino-4,6-dinitrotoluene [2C]	0.144	0.0196	0.0392	0.0588	PM U 2C
88-72-2	2-Nitrotoluene	0.0502	0.0196	0.0392	0.0588	IPM U 2C
99-08-1	3-Nitrotoluene		0.0196	0.0392	0.0588	U
19406-51-0	4-Amino-2,6-dinitrotoluene [2C] 0.0392	0.0345	0.0196	0.0392	0.0588	IPM U 2C
99-99-0	4-Nitrotoluene	0.365	0.0196	0.0392	0.0588	PM, Z-OT U 2C
2691-41-0	HMX [2C]	0.138	0.0196	0.0392	0.0588	PM U 2C
98-95-3	Nitrobenzene		0.0196	0.0392	0.0588	U
55-63-0	Nitroglycerin		0.0980	0.196	0.294	U
78-11-5	PETN		0.0980	0.196	0.294	U
121-82-4	RDX	0.374	0.0196	0.0392	0.0588	PJ U 2C
479-45-8	Tetryl		0.0196	0.0392	0.0588	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1961	0.2130	109	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1961	0.2106	107	55 - 140	

* Values outside of QC limits

SMK
2/11/10

ANALYSIS DATA SHEET

MR17-DUO2-SS01-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012017-04 File ID: 122V2201.D
 Sampled: 11/30/10 13:35 Prepared: 12/02/10 17:55 Analyzed: 12/07/10 05:12
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L01026 Sequence: 0L34115 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.		COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4		1,3,5-Trinitrobenzene		0.0198	0.0396	0.0594	U
99-65-0		1,3-Dinitrobenzene		0.0198	0.0396	0.0594	U
118-96-7		2,4,6-Trinitrotoluene		0.0198	0.0396	0.0594	U
121-14-2		2,4-Dinitrotoluene		0.0198	0.0396	0.0594	U
606-20-2		2,6-Dinitrotoluene		0.0198	0.0396	0.0594	U
35572-78-2		2-Amino-4,6-dinitrotoluene		0.0198	0.0396	0.0594	U
88-72-2		2-Nitrotoluene		0.0198	0.0396	0.0594	U
99-08-1		3-Nitrotoluene		0.0198	0.0396	0.0594	U
19406-51-0		4-Amino-2,6-dinitrotoluene		0.0198	0.0396	0.0594	U
99-99-0		4-Nitrotoluene		0.0198	0.0396	0.0594	U
2691-41-0		HMX		0.0198	0.0396	0.0594	U
98-95-3		Nitrobenzene		0.0198	0.0396	0.0594	U
55-63-0		Nitroglycerin		0.0990	0.198	0.297	U
78-11-5		PETN		0.0990	0.198	0.297	U
121-82-4		RDX		0.0198	0.0396	0.0594	U
479-45-8		Tetryl	0.270	0.0198	0.0396	0.0594	PM
SYSTEM MONITORING COMPOUND			ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene			0.1980	0.2336	118	55 - 140	
1-Chloro-3-nitrobenzene [2C]			0.1980	0.2110	107	55 - 140	

* Values outside of QC limits

smk
 2/11/2011

ANALYSIS DATA SHEET

MR17-DUO2-SS02-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012017-05 File ID: 123V2301.D
 Sampled: 11/30/10 13:40 Prepared: 12/02/10 17:55 Analyzed: 12/07/10 05:44
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L01026 Sequence: 0L34115 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0198	0.0396	0.0594	U
99-65-0	1,3-Dinitrobenzene		0.0198	0.0396	0.0594	U
118-96-7	2,4,6-Trinitrotoluene		0.0198	0.0396	0.0594	U
121-14-2	2,4-Dinitrotoluene		0.0198	0.0396	0.0594	U
606-20-2	2,6-Dinitrotoluene		0.0198	0.0396	0.0594	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0198	0.0396	0.0594	U
88-72-2	2-Nitrotoluene		0.0198	0.0396	0.0594	U
99-08-1	3-Nitrotoluene		0.0198	0.0396	0.0594	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0198	0.0396	0.0594	U
99-99-0	4-Nitrotoluene		0.0198	0.0396	0.0594	U
2691-41-0	HMX		0.0198	0.0396	0.0594	U
98-95-3	Nitrobenzene		0.0198	0.0396	0.0594	U
55-63-0	Nitroglycerin		0.0990	0.198	0.297	U
78-11-5	PETN		0.0990	0.198	0.297	U
121-82-4	RDX	0.0396	0.0198	0.0396	0.0594	U
479-45-8	Tetryl	0.0350	0.0198	0.0396	0.0594	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1980	0.2146	108	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1980	0.2114	107	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-DUO2D-SS03-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012017-06 File ID: 124V2401.D
 Sampled: 11/30/10 13:55 Prepared: 12/02/10 17:55 Analyzed: 12/07/10 06:17
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L01026 Sequence: 0L34115 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene		0.0200	0.0400	0.0600	U
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	U
121-14-2	2,4-Dinitrotoluene		0.0200	0.0400	0.0600	U
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0200	0.0400	0.0600	U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND-		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2209	110	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2136	107	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-DUO2-SS03-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012017-07 File ID: 125V2501.D
 Sampled: 11/30/10 13:50 Prepared: 12/02/10 17:55 Analyzed: 12/07/10 06:49
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L01026 Sequence: 0L34115 Calibration: 0237002 Instrument: GL-HPLC1

Batch:	Sequence:					
	0101020	0534112				
CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0196	0.0392	0.0588	U
99-65-0	1,3-Dinitrobenzene		0.0196	0.0392	0.0588	U
118-96-7	2,4,6-Trinitrotoluene		0.0196	0.0392	0.0588	U
121-14-2	2,4-Dinitrotoluene		0.0196	0.0392	0.0588	U
606-20-2	2,6-Dinitrotoluene		0.0196	0.0392	0.0588	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0196	0.0392	0.0588	U
88-72-2	2-Nitrotoluene		0.0196	0.0392	0.0588	U
99-08-1	3-Nitrotoluene		0.0196	0.0392	0.0588	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0196	0.0392	0.0588	U
99-99-0	4-Nitrotoluene		0.0196	0.0392	0.0588	U
2691-41-0	HMX		0.0196	0.0392	0.0588	U
98-95-3	Nitrobenzene		0.0196	0.0392	0.0588	U
55-63-0	Nitroglycerin		0.0980	0.196	0.294	U
78-11-5	PETN		0.0980	0.196	0.294	U
121-82-4	RDX		0.0196	0.0392	0.0588	U
479-45-8	Tetryl		0.0196	0.0392	0.0588	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1961	0.2129	109	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1961	0.2123	108	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-DUO1-SS01-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012017-08 File ID: 126V2601.D
 Sampled: 11/30/10 14:20 Prepared: 12/02/10 17:55 Analyzed: 12/07/10 07:21
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L01026 Sequence: 0L34115 Calibration: 0237002 Instrument: GL-HPLC1

ation: SECRET

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene		0.0200	0.0400	0.0600	U
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	U
121-14-2	2,4-Dinitrotoluene		0.0200	0.0400	0.0600	U
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0200	0.0400	0.0600	U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2140	107	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2148	107	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-DUO1-SS02-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012017-09 File ID: 127V2701.D
 Sampled: 11/30/10 14:25 Prepared: 12/02/10 17:55 Analyzed: 12/07/10 07:54
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L01026 Sequence: 0L34115 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0196	0.0392	0.0588	U
99-65-0	1,3-Dinitrobenzene		0.0196	0.0392	0.0588	U
118-96-7	2,4,6-Trinitrotoluene		0.0196	0.0392	0.0588	U
121-14-2	2,4-Dinitrotoluene		0.0196	0.0392	0.0588	U
606-20-2	2,6-Dinitrotoluene		0.0196	0.0392	0.0588	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0196	0.0392	0.0588	U
88-72-2	2-Nitrotoluene		0.0196	0.0392	0.0588	U
99-08-1	3-Nitrotoluene		0.0196	0.0392	0.0588	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0196	0.0392	0.0588	U
99-99-0	4-Nitrotoluene		0.0196	0.0392	0.0588	U
2691-41-0	HMX		0.0196	0.0392	0.0588	U
98-95-3	Nitrobenzene		0.0196	0.0392	0.0588	U
55-63-0	Nitroglycerin		0.0980	0.196	0.294	U
78-11-5	PETN		0.0980	0.196	0.294	U
121-82-4	RDX		0.0196	0.0392	0.0588	U
479-45-8	Tetryl		0.0196	0.0392	0.0588	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1961	0.2194	112	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1961	0.2131	109	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-DUO1-SS03-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012017-10 File ID: 128V2801.D
 Sampled: 11/30/10 14:30 Prepared: 12/02/10 17:55 Analyzed: 12/07/10 08:26
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L01026 Sequence: 0L34115 Calibration: 0237002 Instrument: GL-HPLC1

ation: SECRET

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene		0.0200	0.0400	0.0600	U
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	U
121-14-2	2,4-Dinitrotoluene		0.0200	0.0400	0.0600	U
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0200	0.0400	0.0600	U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2098	105	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2145	107	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-EB-113010

Laboratory: Empirical Laboratories, LLC SDG: 1012017
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Water Laboratory ID: 1012017-11 File ID: 106V0601.D
 Sampled: 11/30/10 15:30 Prepared: 12/06/10 07:45 Analyzed: 12/06/10 20:36
 Solids: Preparation: EXT EXPL W Dilution: 1
 Batch: 0L06002 Sequence: 0L34115 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0784	0.157	0.314	U
99-65-0	1,3-Dinitrobenzene		0.0784	0.157	0.314	U
118-96-7	2,4,6-Trinitrotoluene		0.0784	0.157	0.314	U
121-14-2	2,4-Dinitrotoluene		0.0784	0.157	0.314	U
606-20-2	2,6-Dinitrotoluene		0.0784	0.157	0.314	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0784	0.157	0.314	U
88-72-2	2-Nitrotoluene		0.0784	0.157	0.314	U
99-08-1	3-Nitrotoluene		0.0784	0.157	0.314	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0784	0.157	0.314	U
99-99-0	4-Nitrotoluene		0.0784	0.157	0.314	U
2691-41-0	HMX		0.0784	0.157	0.314	U
98-95-3	Nitrobenzene		0.0784	0.157	0.314	U
55-63-0	Nitroglycerin		0.196	0.392	0.784	U
78-11-5	PETN		0.196	0.392	0.784	U
121-82-4	RDX		0.0784	0.157	0.314	U
479-45-8	Tetryl		0.0784	0.157	0.314	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		1.961	2.226	114	40 - 145	
1-Chloro-3-nitrobenzene [2C]		1.961	2.058	105	40 - 145	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-DUO3-SS01-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Soil Laboratory ID: 1012017-01 File ID: PERC000011.D
Sampled: 11/30/10 12:45 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 14:59
Solids: 90.06 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	8.07	0.666	2.22	5.55	

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ANALYSIS DATA SHEET

MR17-DUO3-SS02-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Soil Laboratory ID: 1012017-02 File ID: PERC000012.D
Sampled: 11/30/10 13:05 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 15:17
Solids: 91.15 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.658	2.19	5.49	U

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2/11/2011

ANALYSIS DATA SHEET

MR17-DUO3-SS03-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Soil Laboratory ID: 1012017-03 File ID: PERC000013.D
Sampled: 11/30/10 13:20 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 15:35
Solids: 91.44 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.656	2.19	5.47	U

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2/11/2011

ANALYSIS DATA SHEET

MR17-DUO2-SS01-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Soil Laboratory ID: 1012017-04 File ID: PERC000014.D
Sampled: 11/30/10 13:35 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 15:53
Solids: 93.50 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.642	2.14	5.35	U

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ANALYSIS DATA SHEET

MR17-DUO2-SS02-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Soil Laboratory ID: 1012017-05 File ID: PERC000015.D
Sampled: 11/30/10 13:40 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 16:10
Solids: 88.92 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.675	2.25	5.62	U

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2/11/11

ANALYSIS DATA SHEET

MR17-DUO2D-SS03-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012017-06 File ID: PERC000016.D
 Sampled: 11/30/10 13:55 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 16:28
 Solids: 88.21 Preparation: LCMS PERC6850 S Dilution: 1
 Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.680	2.27	5.67	U

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2/10/11*

ANALYSIS DATA SHEET

MR17-DUO2-SS03-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Soil Laboratory ID: 1012017-07 File ID: PERC000017.D
Sampled: 11/30/10 13:50 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 16:46
Solids: 94.02 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.638	2.13	5.32	U

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2/1/11

ANALYSIS DATA SHEET

MR17-DUO1-SS01-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Soil Laboratory ID: 1012017-08 File ID: PERC000018.D
Sampled: 11/30/10 14:20 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 17:04
Solids: 95.39 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	1.21	0.629	2.10	5.24	J

SMK
2/11/11

ANALYSIS DATA SHEET

MR17-DUO1-SS02-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012017-09 File ID: PERC000019.D
 Sampled: 11/30/10 14:25 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 17:22
 Solids: 95.48 Preparation: LCMS PERC6850 S Dilution: 1
 Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.628	2.09	5.24	U

SMK
2/11/2011

ANALYSIS DATA SHEET

MR17-DUO1-SS03-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012017
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Soil Laboratory ID: 1012017-10 File ID: PERC000020.D
Sampled: 11/30/10 14:30 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 17:40
Solids: 96.10 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.624	2.08	5.20	U

SMH
2/11/2011

ANALYSIS DATA SHEET

MR17-EB-113010

Laboratory: Empirical Laboratories, LLC SDG: 1012017
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Water Laboratory ID: 1012017-11 File ID: PERC000011.D
 Sampled: 11/30/10 15:30 Prepared: 12/08/10 11:06 Analyzed: 12/10/10 13:08
 Solids: Preparation: LCMS PREP6850 W Dilution: 1
 Batch: 0L08008 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.0660	0.200	0.500	U

SMH
2/11/2011

Project: MCB Camp Lejeune (CTO-141), Jacksonville, NC
Laboratory: Empirical Laboratories, LLC
Sample Delivery Group: 1012036
Fraction: Organic
Matrix: Solid
Report Date: 2/21/2011

This analytical quality assurance report is based upon a review of analytical data generated for soilsamples. Four equipment blanks, two field duplicate samples, and one matrix spike/matrix spike duplicate were submitted with the samples in this SDG. The sample locations, laboratory identification numbers, sample collection dates, sample matrix, and analyses performed are presented in Table 1.

The samples were analyzed for explosive compounds and perchlorate. The sample analyses were performed in accordance with the procedures outlined in "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997

All sample analyses have undergone an analytical quality assurance review to ensure adherence to the required protocols. Results have been validated or qualified according to general guidance provided in the "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", OSWER 9240.1-45 EPA 540-R-04-004, October 1999, and "Data Validation Standard Operating Procedures for Contract Laboratory Program Routine Analytical Services", USEPA Region IV, Revision 2.1, July 1999.

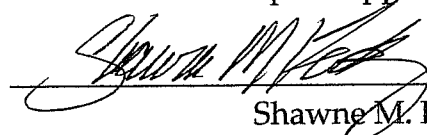
This document specifies procedures for validating data generated for CLP analyses. Therefore, the quality control requirements specified in the methods and associated acceptance criteria were also used to evaluate the non-CLP data. The parameters presented on the following page were evaluated.

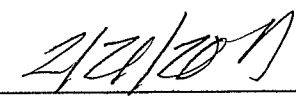
-
- | | | |
|---|---|--|
| X | • | Data Completeness |
| X | • | Chain of Custody Documentation |
| X | • | Holding Times |
| X | • | Instrument Performance |
| X | • | Initial and Continuing Calibrations |
| X | • | Laboratory and Field Blank Analysis Results |
| X | • | Surrogate Compound Recoveries |
| X | • | Matrix Spike/Matrix Spike Duplicate Recoveries and Reproducibility |
| X | • | Field Duplicate Analysis Results |
| X | • | Laboratory Control Sample Results |
| X | • | Internal Standard Performance |
| X | • | Qualitative Identification |
| X | • | Quantitation/Reporting Limits |
-

X - Denotes parameter evaluated.

It is recommended that the data only be used according to the qualifiers presented, and discussed in this report. All other data should be considered qualitatively and quantitatively valid as reported by the laboratory, based on the items evaluated.

Report Approved By:


Shawne M. Rodgers
President


Date

1.0 DATA COMPLETENESS

The data package was complete.

2.0 CHAIN OF CUSTODY DOCUMENTATION

The chain of custody documentation was complete.

3.0 HOLDING TIMES

All criteria were met. No qualifiers were applied.

4.0 INSTRUMENT PERFORMANCE

All criteria were met. No qualifiers were applied.

5.0 INITIAL AND CONTINUING CALIBRATIONS

The results for 2, 4, 6-trinitrotoluene and 2, 4-dinitrotoluene for samples MR17-IS12-5-7-10D, MR17-SS12-10D, MR17-SS13-10D, MR17-SS16-10D, MR17-SS15-10D, MR17-SS14-10D, MR17-SS17-10D, MR17-SS19-10D, MR17-SS10-10D, and MR17-IS15-1-3-10D should be considered quantitative estimates. The continuing calibration precision criterion was exceeded for these compounds. The lack of precision indicates instrument instability for these compounds. Positive 2, 4, 6-trinitrotoluene and 2, 4-dinitrotoluene results have been marked with "J" qualifiers to indicate that they are estimates. Reporting limits (RLs) are marked "UJ".

6.0 LABORATORY AND FIELD BLANK ANALYSIS RESULTS

All criteria were met. No qualifiers were applied.

7.0 SURROGATE COMPOUNDS

All criteria were met. No qualifiers were applied.

8.0 *MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND REPRODUCIBILITY*

All criteria were met. No qualifiers were applied.

9.0 *FIELD DUPLICATE RESULTS*

Duplicate samples MR17-SS11-10D and MR17-SS11D-10D, and MR17-SS08-10D and MR17-SS08D-10D were submitted to the laboratory evaluate sampling and analytical precision for those analytes determined to be present. Results for these duplicate samples are presented in Tables 2 and 3. Precision is evaluated by calculating the relative percent difference (%RPD) between duplicate pair results. There are no USEPA-established acceptance criteria for field duplicate samples. EDQ uses internal acceptance criteria of thirty percent for volatile detected compounds (and 40 percent for extractable compounds) to evaluate soil field duplicate samples.

10.0 *LABORATORY CONTROL SAMPLE RESULTS*

All criteria were met. No qualifiers were applied.

11.0 *INTERNAL STANDARD PERFORMANCE*

All criteria were met. No qualifiers were applied.

12.0 *QUALITATIVE IDENTIFICATION*

All criteria were met. No qualifiers were applied.

13.0 *QUANTITATION/REPORTING LIMITS*

A lack of precision (greater than 40 %, but less than 70 % difference between results) was observed for the following explosive compounds on the dual chromatographic columns used for sample analysis. The laboratory for reporting purposes used the lower concentration for these compounds. Results less than the Reporting Limit (RL) been marked with

“J” qualifiers to indicate that they are quantitative estimates. Results greater than the RL are marked “N”.

Sample	Affected Compound
MR17-SS11-10D	2-Nitrotoluene
MR17-SS11D-10D	2-Nitrotoluene
MR17-SS08-10D	2, 4, 6-Trinitrotoluene
MR17-SS08D-10D	Nitroglycerin
MR17-SS06-10D	3-Nitrotoluene
MR17-SS04-10D	2, 4, 6-Trinitrotoluene
MR17-SS16-10D	2-Amino-4,6-dinitrotoluene
MR17-SS15-10D	1,3-Dinitrobenzene
MR17-SS14-10D	Nitrobenzene
MR17-SS17-10D	RDX
MR17-SS10-10D	2,6-Dinitrotoluene
MR17-EB-120210-SS	RDX

Poor precision (greater than 70 % difference between results) was observed for the explosive compounds presented in Table 2 on the dual chromatographic columns used for sample analysis. As required by USEPA protocol, the laboratory for reporting purposes used the lower concentration for these compounds. The positive explosive results that are less than the RL should be considered non-detected at the RL. Affected sample results less than the limit of detection (LOD) were replaced by this numeric value and marked “U”. Sample results greater than the LOD, but less than the RL were marked “U”.

The following positive results should be considered biased high quantitative estimates. There was a lack of separation between the peaks for the explosive compounds and those of another on the confirmation chromatographic column. The results have been marked with “J” qualifiers to indicate that they are estimates.

Sample	Coeluting Peak	Affected Compound
MR17-SS13-10D	PETN	4-Nitrotoluene
MR17-SS14-10D	PETN	4-Nitrotoluene
MR17-SS17-10D	2-Amino-4,6-dinitrotoluene	2-Nitrotoluene

As required by USEPA protocol, all compounds, which were qualitatively identified at concentrations below their respective RLs, have been marked with "J" qualifiers to indicate that they are quantitative estimates.

METHODOLOGY REFERENCES

Analysis	Reference
Explosive Compounds	Method 8330, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997
Nitroglycerin and PETN	Method 8332, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997
Perchlorate	Method 6850, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997

Table 1 Samples For Data Validation Review
MCB Camp Lejeune, North Carolina (CTO-141)

SAMPLE ID.	LABORATORY ID	SDG	DATE COLLECTED	ANALYSES PERFORMED				
				MATRIX	8330	6850	6010B	7470A 7471A
Sample_Name	Lab_Sample_ID	SDG	DateTime_Collected	Total Of SDG	8330	6850	6010B	7470A 7471A
MRI17-SS11-10D	1012036-01	1012036	12/01/2010 09:15	Soil	X	X	X	X
MRI17-SS11D-10D	1012036-02	1012036	12/01/2010 09:20	Soil	X	X	X	X
MRI17-SS08-10D	1012036-03	1012036	12/01/2010 09:30	Soil	X	X	X	X
MRI17-SS08D-10D	1012036-04	1012036	12/01/2010 09:35	Soil	X	X	X	X
MRI17-SS06-10D	1012036-05	1012036	12/01/2010 12:30	Soil	X	X	X	X
MRI17-IS09-3-5-10D	1012036-06	1012036	12/01/2010 10:30	Soil	X	X	X	X
MRI17-IS10-3-5-10D	1012036-07	1012036	12/01/2010 13:35	Soil	X	X	X	X
MRI17-SS09-10D	1012036-08	1012036	12/01/2010 13:15	Soil	X	X	X	X
MRI17-SS04-10D	1012036-09	1012036	12/01/2010 13:40	Soil	X	X	X	X
MRI17-SS05-10D	1012036-10	1012036	12/01/2010 14:00	Soil	X	X	X	X
MRI17-SS02-10D	1012036-11	1012036	12/01/2010 14:10	Soil	X	X	X	X
MRI17-SS01-10D	1012036-12	1012036	12/01/2010 14:25	Soil	X	X	X	X
MRI17-SS03-10D	1012036-13	1012036	12/01/2010 15:05	Soil	X	X	X	X
MRI17-SS07-10D	1012036-14	1012036	12/01/2010 15:20	Soil	X	X	X	X
MRI17-EB-120110-SS	1012036-15	1012036	12/01/2010 16:00	Equipment Blank	X	X	X	X
MRI17-EB-120110-IS	1012036-16	1012036	12/01/2010 16:05	Equipment Blank	X	X	X	X
MRI17-IS11-4-6-10D	1012036-17	1012036	12/02/2010 08:50	Soil	X	X	X	X
MRI17-SS12-10D	1012036-18	1012036	12/02/2010 10:50	Soil	X	X	X	X
MRI17-SS13-10D	1012036-19	1012036	12/02/2010 08:30	Soil	X	X	X	X
MRI17-SS16-10D	1012036-20	1012036	12/02/2010 09:00	Soil	X	X	X	X
MRI17-SS15-10D	1012036-21	1012036	12/02/2010 09:10	Soil	X	X	X	X
MRI17-SS14-10D	1012036-22	1012036	12/02/2010 09:25	Soil	X	X	X	X
MRI17-SS18-10D	1012036-23	1012036	12/02/2010 09:40	Soil	X	X	X	X
MRI17-SS17-10D	1012036-24	1012036	12/02/2010 09:55	Soil	X	X	X	X
MRI17-SS19-10D	1012036-25	1012036	12/02/2010 10:10	Soil	X	X	X	X
MRI17-SS10-10D	1012036-26	1012036	12/02/2010 10:55	Soil	X	X	X	X
	1012036-27	1012036	12/02/2010 13:40	Soil	X	X	X	X

Table 1 Samples For Data Validation Review
 MCB Camp Lejeune, North Carolina (CTO-141)

SAMPLE I.D.	LABORATORY I.D	SDG	DATE COLLECTED	ANALYSES PERFORMED					
				MATRIX	8330	6850	6010B	7470A	7471A
MR17-EB-120210-SS	1012036-28	1012036	12/01/2010 14:45	Equipment Blank	X	X	X	X	
MR17-EB-120210-IS	1012036-29	1012036	12/02/2010 15:00	Equipment Blank	X	X	X	X	
MR17-IS15-1-3-10D	1012036-30	1012036	12/02/2010 14:40	Soil	X	X	X		X

Table 4

Explosives Results Qualified Due to Dual Column Imprecision

Sample	Affected Compounds
MR17-SS11-10D	RDx
MR17-SS11D-10D	2-Amino-4,6-dinitrotoluene, RDx
MR17-SS08-10D	2-Amino-4,6-dinitrotoluene, Nitroglycerin, RDx, Tetryl
MR17-SS08D-10D	2-Amino-4,6-dinitrotoluene, 2-Nitrotoluene, Tetryl
MR17-SS06-10D	2-Nitrotoluene, Tetryl
MR17-SS09-10D	2-Nitrotoluene, 3-Nitrotoluene, RDx
MR17-SS04-10D	3-Nitrotoluene, RDx
MR17-SS01-10D	2,4-Dinitrotoluene, RDx
MR17-SS07-10D	2,6-Dinitrotoluene, 3-Nitrotoluene
MR17-SS13-10D	2,4-Dinitrotoluene, 3-Nitrotoluene, HMX, Nitrobenzene, RDx, Tetryl
MR17-SS16-10D	3-Nitrotoluene, HMX, Nitrobenzene, PETN, RDx, Tetryl
MR17-SS15-10D	1,3,5-Trinitrobenzene, 2,4-Dinitrotoluene
MR17-SS14-10D	1,3-Dinitrobenzene, 2,6-Dinitrobenzene, 2-Amino-4,6-dinitrotoluene, Tetryl
MR17-SS18-10D	1,3-Dinitrobenzene, 2,4-Dinitrotoluene
MR17-SS17-10D	1,3,5-Trinitrobenzene, 2,6-Dinitrotoluene, 2-Amino-4,6-dinitrotoluene, 4-Nitrotoluene, HMX, PETN
MR17-SS19-10D	2-Amino-4,6-dinitrotoluene
MR17-SS10-10D	2-Amino-4,6-dinitrotoluene, 4-Nitrotoluene

ANALYSIS DATA SHEET

MR17-SS11-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-01 File ID: 125V2501.D
 Sampled: 12/01/10 09:15 Prepared: 12/08/10 11:20 Analyzed: 12/10/10 01:15
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L07006 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0198	0.0396	0.0594	U
99-65-0	1,3-Dinitrobenzene		0.0198	0.0396	0.0594	U
118-96-7	2,4,6-Trinitrotoluene		0.0198	0.0396	0.0594	U
121-14-2	2,4-Dinitrotoluene		0.0198	0.0396	0.0594	U
606-20-2	2,6-Dinitrotoluene		0.0198	0.0396	0.0594	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0198	0.0396	0.0594	U
88-72-2	2-Nitrotoluene	0.123	0.0198	0.0396	0.0594	U
99-08-1	3-Nitrotoluene		0.0198	0.0396	0.0594	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0198	0.0396	0.0594	U
99-99-0	4-Nitrotoluene		0.0198	0.0396	0.0594	U
2691-41-0	HMX		0.0198	0.0396	0.0594	U
98-95-3	Nitrobenzene		0.0198	0.0396	0.0594	U
55-63-0	Nitroglycerin	0.261	0.0990	0.198	0.297	J
78-11-5	PETN		0.0990	0.198	0.297	U
121-82-4	RDX	0.0396	0.0198	0.0396	0.0594	U
479-45-8	Tetryl		0.0198	0.0396	0.0594	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1980	0.2244	113	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1980	0.2107	106	55 - 140	

* Values outside of QC limits

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 2/12/2011

ANALYSIS DATA SHEET

MR17-SS11D-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-02 File ID: 126V2601.D
 Sampled: 12/01/10 09:20 Prepared: 12/08/10 11:20 Analyzed: 12/10/10 01:48
 Solids: Preparation: EXT_EXPL S Dilution: 1
 Batch: 0L07006 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0194	0.0388	0.0583	U
99-65-0	1,3-Dinitrobenzene		0.0194	0.0388	0.0583	U
118-96-7	2,4,6-Trinitrotoluene		0.0194	0.0388	0.0583	U
121-14-2	2,4-Dinitrotoluene		0.0194	0.0388	0.0583	U
606-20-2	2,6-Dinitrotoluene		0.0194	0.0388	0.0583	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.0759	0.0194	0.0388	0.0583	U <i>2C</i>
88-72-2	2-Nitrotoluene	0.131	0.0194	0.0388	0.0583	U <i>2C</i>
99-08-1	3-Nitrotoluene		0.0194	0.0388	0.0583	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0194	0.0388	0.0583	U
99-99-0	4-Nitrotoluene		0.0194	0.0388	0.0583	U
2691-41-0	HMX		0.0194	0.0388	0.0583	U
98-95-3	Nitrobenzene		0.0194	0.0388	0.0583	U
55-63-0	Nitroglycerin		0.0971	0.194	0.291	U
78-11-5	PETN		0.0971	0.194	0.291	U
121-82-4	RDX	<i>0.0388</i>	0.0276	0.0194	0.0388	U <i>2C</i>
479-45-8	Tetryl		0.0194	0.0388	0.0583	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1942	0.2378	122	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1942	0.5248	270	55 - 140	*

* Values outside of QC limits

sum
2/12/01

ANALYSIS DATA SHEET

MR17-SS08-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-03File ID: 127V2701.DSampled: 12/01/10 09:30Prepared: 12/08/10 11:20Analyzed: 12/10/10 02:20

Solids:

Preparation: EXT EXPL SDilution: 1Batch: 0L07006Sequence: 0L34905Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0192	0.0385	0.0577	U
99-65-0	1,3-Dinitrobenzene		0.0192	0.0385	0.0577	U
118-96-7	2,4,6-Trinitrotoluene	0.215	0.0192	0.0385	0.0577	PM U 2C
121-14-2	2,4-Dinitrotoluene		0.0192	0.0385	0.0577	U
606-20-2	2,6-Dinitrotoluene		0.0192	0.0385	0.0577	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.0385	0.0192	0.0385	0.0577	PM U 2C
88-72-2	2-Nitrotoluene		0.0192	0.0385	0.0577	U
99-08-1	3-Nitrotoluene	0.229	0.0192	0.0385	0.0577	
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0192	0.0385	0.0577	U
99-99-0	4-Nitrotoluene		0.0192	0.0385	0.0577	U
2691-41-0	HMX		0.0192	0.0385	0.0577	U
98-95-3	Nitrobenzene		0.0192	0.0385	0.0577	U
55-63-0	Nitroglycerin	0.235	0.0962	0.192	0.288	PM U 2C
78-11-5	PETN		0.0962	0.192	0.288	U
121-82-4	RDX [2C]	0.646	0.0192	0.0385	0.0577	PM U 2C
479-45-8	Tetryl	0.168	0.0192	0.0385	0.0577	PM U 2C
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1923	0.2012	105	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1923	0.1912	99.4	55 - 140	

* Values outside of QC limits

SMA
2/12/2011

ANALYSIS DATA SHEET

MR17-SS08D-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-04File ID: 128V2801.DSampled: 12/01/10 09:35Prepared: 12/08/10 11:20Analyzed: 12/10/10 02:53Solids: Preparation: EXT EXPL SDilution: 1Batch: 0L07006Sequence: 0L34905Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene		0.0200	0.0400	0.0600	U
118-96-7	2,4,6-Trinitrotoluene [2C]	0.0474	0.0200	0.0400	0.0600	JPM U
121-14-2	2,4-Dinitrotoluene		0.0200	0.0400	0.0600	U
606-20-2	2,6-Dinitrotoluene	0.0327	0.0200	0.0400	0.0600	JPM
35572-78-2	2-Amino-4,6-dinitrotoluene	0.0400	0.0200	0.0400	0.0600	JPM U
88-72-2	2-Nitrotoluene [2C]	0.0400	0.0200	0.0400	0.0600	JPM U
99-08-1	3-Nitrotoluene	0.123	0.0200	0.0400	0.0600	
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin	0.203	0.100	0.200	0.300	JPM
78-11-5	PETN	0.107	0.100	0.200	0.300	J
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl	0.0400	0.0200	0.0400	0.0600	JPM U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.1946	97.3	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.1602	80.1	55 - 140	

* Values outside of QC limits

SML
2/12/2011

ANALYSIS DATA SHEET

MR17-SS06-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-05 File ID: 130V3001.D
 Sampled: 12/01/10 12:30 Prepared: 12/08/10 11:20 Analyzed: 12/10/10 03:57
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L07006 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0198	0.0396	0.0594	U
99-65-0	1,3-Dinitrobenzene		0.0198	0.0396	0.0594	U
118-96-7	2,4,6-Trinitrotoluene		0.0198	0.0396	0.0594	U
121-14-2	2,4-Dinitrotoluene		0.0198	0.0396	0.0594	U
606-20-2	2,6-Dinitrotoluene		0.0198	0.0396	0.0594	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0198	0.0396	0.0594	U
88-72-2	2-Nitrotoluene	0.0835	0.0198	0.0396	0.0594	PM U
99-08-1	3-Nitrotoluene	0.0239	0.0198	0.0396	0.0594	JP J
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0198	0.0396	0.0594	U
99-99-0	4-Nitrotoluene		0.0198	0.0396	0.0594	U
2691-41-0	HMX		0.0198	0.0396	0.0594	U
98-95-3	Nitrobenzene		0.0198	0.0396	0.0594	U
55-63-0	Nitroglycerin		0.0990	0.198	0.297	U
78-11-5	PETN		0.0990	0.198	0.297	UM
121-82-4	RDX		0.0198	0.0396	0.0594	U
479-45-8	Tetryl	0.0437	0.0198	0.0396	0.0594	IPM U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1980	0.2105	106	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1980	0.1924	97.2	55 - 140	

* Values outside of QC limits

SMK
 2/12/2011

ANALYSIS DATA SHEET

MR17-IS09-3-5-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-06 File ID: 133V3301.D
 Sampled: 12/01/10 10:30 Prepared: 12/08/10 11:20 Analyzed: 12/10/10 05:34
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L07006 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0192	0.0385	0.0577	U
99-65-0	1,3-Dinitrobenzene		0.0192	0.0385	0.0577	U
118-96-7	2,4,6-Trinitrotoluene		0.0192	0.0385	0.0577	U
121-14-2	2,4-Dinitrotoluene		0.0192	0.0385	0.0577	U
606-20-2	2,6-Dinitrotoluene		0.0192	0.0385	0.0577	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0192	0.0385	0.0577	U
88-72-2	2-Nitrotoluene		0.0192	0.0385	0.0577	U
99-08-1	3-Nitrotoluene		0.0192	0.0385	0.0577	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0192	0.0385	0.0577	U
99-99-0	4-Nitrotoluene		0.0192	0.0385	0.0577	U
2691-41-0	HMX		0.0192	0.0385	0.0577	U
98-95-3	Nitrobenzene		0.0192	0.0385	0.0577	U
55-63-0	Nitroglycerin		0.0962	0.192	0.288	U
78-11-5	PETN		0.0962	0.192	0.288	U
121-82-4	RDX		0.0192	0.0385	0.0577	U
479-45-8	Tetryl		0.0192	0.0385	0.0577	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1923	0.2122	110	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1923	0.2123	110	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-IS10-3-5-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-07 File ID: 134V3401.D
 Sampled: 12/01/10 13:35 Prepared: 12/08/10 11:20 Analyzed: 12/10/10 06:06
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L07006 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0194	0.0388	0.0583	U
99-65-0	1,3-Dinitrobenzene		0.0194	0.0388	0.0583	U
118-96-7	2,4,6-Trinitrotoluene		0.0194	0.0388	0.0583	U
121-14-2	2,4-Dinitrotoluene		0.0194	0.0388	0.0583	U
606-20-2	2,6-Dinitrotoluene		0.0194	0.0388	0.0583	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0194	0.0388	0.0583	U
88-72-2	2-Nitrotoluene		0.0194	0.0388	0.0583	U
99-08-1	3-Nitrotoluene		0.0194	0.0388	0.0583	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0194	0.0388	0.0583	U
99-99-0	4-Nitrotoluene		0.0194	0.0388	0.0583	U
2691-41-0	HMX		0.0194	0.0388	0.0583	U
98-95-3	Nitrobenzene		0.0194	0.0388	0.0583	U
55-63-0	Nitroglycerin		0.0971	0.194	0.291	U
78-11-5	PETN		0.0971	0.194	0.291	U
121-82-4	RDX		0.0194	0.0388	0.0583	U
479-45-8	Tetryl		0.0194	0.0388	0.0583	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1942	0.2027	104	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1942	0.2217	114	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-SS09-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-08File ID: 135V3501.DSampled: 12/01/10 13:15Prepared: 12/08/10 11:20Analyzed: 12/10/10 06:39Solids: Preparation: EXT EXPL SDilution: 1Batch: 0L07006Sequence: 0L34905Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0194	0.0388	0.0583	U
99-65-0	1,3-Dinitrobenzene		0.0194	0.0388	0.0583	U
118-96-7	2,4,6-Trinitrotoluene		0.0194	0.0388	0.0583	U
121-14-2	2,4-Dinitrotoluene		0.0194	0.0388	0.0583	U
606-20-2	2,6-Dinitrotoluene		0.0194	0.0388	0.0583	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0194	0.0388	0.0583	U
88-72-2	2-Nitrotoluene	<i>0.0388</i>	0.0194	0.0388	0.0583	PM U
99-08-1	3-Nitrotoluene [2C]	0.107	0.0194	0.0388	0.0583	PM U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0194	0.0388	0.0583	U
99-99-0	4-Nitrotoluene		0.0194	0.0388	0.0583	U
2691-41-0	HMX		0.0194	0.0388	0.0583	U
98-95-3	Nitrobenzene		0.0194	0.0388	0.0583	U
55-63-0	Nitroglycerin		0.0971	0.194	0.291	U
78-11-5	PETN		0.0971	0.194	0.291	U
121-82-4	RDX	0.0630	0.0194	0.0388	0.0583	PM U
479-45-8	Tetryl		0.0194	0.0388	0.0583	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1942	0.2114	109	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1942	0.2127	110	55 - 140	

* Values outside of QC limits

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2/12/2011

ANALYSIS DATA SHEET

MR17-SS04-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-09 File ID: 136V3601.D
 Sampled: 12/01/10 13:40 Prepared: 12/08/10 11:20 Analyzed: 12/10/10 07:11
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L07006 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0192	0.0385	0.0577	U
99-65-0	1,3-Dinitrobenzene		0.0192	0.0385	0.0577	U
118-96-7	2,4,6-Trinitrotoluene	0.150	0.0192	0.0385	0.0577	U N 2C
121-14-2	2,4-Dinitrotoluene		0.0192	0.0385	0.0577	U
606-20-2	2,6-Dinitrotoluene		0.0192	0.0385	0.0577	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0192	0.0385	0.0577	U
88-72-2	2-Nitrotoluene		0.0192	0.0385	0.0577	U
99-08-1	3-Nitrotoluene	0.0559	0.0192	0.0385	0.0577	U U 2C
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0192	0.0385	0.0577	U
99-99-0	4-Nitrotoluene		0.0192	0.0385	0.0577	U
2691-41-0	HMX		0.0192	0.0385	0.0577	U
98-95-3	Nitrobenzene		0.0192	0.0385	0.0577	U
55-63-0	Nitroglycerin		0.0962	0.192	0.288	U
78-11-5	PETN		0.0962	0.192	0.288	U
121-82-4	RDX	0.0527	0.0192	0.0385	0.0577	U U 2C
479-45-8	Tetryl		0.0192	0.0385	0.0577	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1923	0.2003	104	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1923	0.2245	117	55 - 140	

* Values outside of QC limits

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ANALYSIS DATA SHEET

MR17-SS05-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-10 File ID: 137V3701.D
 Sampled: 12/01/10 14:00 Prepared: 12/08/10 11:20 Analyzed: 12/10/10 07:43
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L07006 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0196	0.0392	0.0588	U
99-65-0	1,3-Dinitrobenzene		0.0196	0.0392	0.0588	U
118-96-7	2,4,6-Trinitrotoluene		0.0196	0.0392	0.0588	U
121-14-2	2,4-Dinitrotoluene		0.0196	0.0392	0.0588	U
606-20-2	2,6-Dinitrotoluene		0.0196	0.0392	0.0588	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0196	0.0392	0.0588	U
88-72-2	2-Nitrotoluene		0.0196	0.0392	0.0588	U
99-08-1	3-Nitrotoluene		0.0196	0.0392	0.0588	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0196	0.0392	0.0588	U
99-99-0	4-Nitrotoluene		0.0196	0.0392	0.0588	U
2691-41-0	HMX		0.0196	0.0392	0.0588	U
98-95-3	Nitrobenzene		0.0196	0.0392	0.0588	U
55-63-0	Nitroglycerin		0.0980	0.196	0.294	U
78-11-5	PETN		0.0980	0.196	0.294	U
121-82-4	RDX		0.0196	0.0392	0.0588	U
479-45-8	Tetryl		0.0196	0.0392	0.0588	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1961	0.2030	104	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1961	0.2287	117	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-SS02-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-11 File ID: 138V3801.D
 Sampled: 12/01/10 14:10 Prepared: 12/08/10 11:20 Analyzed: 12/10/10 08:16
 Solids: Preparation: EXT_EXPL_S Dilution: 1
 Batch: 0L07006 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0192	0.0385	0.0577	U
99-65-0	1,3-Dinitrobenzene		0.0192	0.0385	0.0577	U
118-96-7	2,4,6-Trinitrotoluene		0.0192	0.0385	0.0577	U
121-14-2	2,4-Dinitrotoluene		0.0192	0.0385	0.0577	U
606-20-2	2,6-Dinitrotoluene		0.0192	0.0385	0.0577	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0192	0.0385	0.0577	U
88-72-2	2-Nitrotoluene		0.0192	0.0385	0.0577	U
99-08-1	3-Nitrotoluene		0.0192	0.0385	0.0577	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0192	0.0385	0.0577	U
99-99-0	4-Nitrotoluene		0.0192	0.0385	0.0577	U
2691-41-0	HMX		0.0192	0.0385	0.0577	U
98-95-3	Nitrobenzene		0.0192	0.0385	0.0577	U
55-63-0	Nitroglycerin		0.0962	0.192	0.288	U
78-11-5	PETN		0.0962	0.192	0.288	U
121-82-4	RDX		0.0192	0.0385	0.0577	U
479-45-8	Tetryl		0.0192	0.0385	0.0577	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1923	0.2077	108	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1923	0.2059	107	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-SS01-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-12 File ID: 139V3901.D
 Sampled: 12/01/10 14:25 Prepared: 12/08/10 11:20 Analyzed: 12/10/10 08:48
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L07006 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene		0.0200	0.0400	0.0600	U
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	U
121-14-2	2,4-Dinitrotoluene	<i>0.0400</i>	0.0235	0.0400	0.0600	U <i>2C</i>
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0200	0.0400	0.0600	U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX	0.0568	0.0200	0.0400	0.0600	U <i>2C</i>
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2219	111	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2292	115	55 - 140	

* Values outside of QC limits

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2/10/11

ANALYSIS DATA SHEET

MR17-SS03-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-13 File ID: 140V4001.D
 Sampled: 12/01/10 15:05 Prepared: 12/08/10 11:20 Analyzed: 12/10/10 09:20
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L07006 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene		0.0200	0.0400	0.0600	U
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	U
121-14-2	2,4-Dinitrotoluene		0.0200	0.0400	0.0600	U
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0200	0.0400	0.0600	U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2074	104	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2269	113	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-SS07-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-14 File ID: 141V4101.D
 Sampled: 12/01/10 15:20 Prepared: 12/08/10 11:20 Analyzed: 12/10/10 09:52
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L07006 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene		0.0200	0.0400	0.0600	U
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	U
121-14-2	2,4-Dinitrotoluene		0.0200	0.0400	0.0600	U
606-20-2	2,6-Dinitrotoluene	<i>0.0400</i> 0.0242	0.0200	0.0400	0.0600	U <i>2C</i>
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0200	0.0400	0.0600	U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene [2C]	<i>0.0400</i> 0.0223	0.0200	0.0400	0.0600	JPM U <i>2C</i>
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2142	107	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2309	115	55 - 140	

* Values outside of QC limits

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2/12/10

ANALYSIS DATA SHEET

MR17-EB-120110-SS

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Water Laboratory ID: 1012036-15 File ID: 107V0701.D
 Sampled: 12/01/10 16:00 Prepared: 12/06/10 07:45 Analyzed: 12/06/10 21:08
 Solids: Preparation: EXT EXPL W Dilution: 1
 Batch: 0L06002 Sequence: 0L34115 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0784	0.157	0.314	U
99-65-0	1,3-Dinitrobenzene		0.0784	0.157	0.314	U
118-96-7	2,4,6-Trinitrotoluene		0.0784	0.157	0.314	U
121-14-2	2,4-Dinitrotoluene		0.0784	0.157	0.314	U
606-20-2	2,6-Dinitrotoluene		0.0784	0.157	0.314	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0784	0.157	0.314	U
88-72-2	2-Nitrotoluene		0.0784	0.157	0.314	U
99-08-1	3-Nitrotoluene		0.0784	0.157	0.314	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0784	0.157	0.314	U
99-99-0	4-Nitrotoluene		0.0784	0.157	0.314	U
2691-41-0	HMX		0.0784	0.157	0.314	U
98-95-3	Nitrobenzene		0.0784	0.157	0.314	U
55-63-0	Nitroglycerin		0.196	0.392	0.784	U
78-11-5	PETN		0.196	0.392	0.784	U
121-82-4	RDX		0.0784	0.157	0.314	U
479-45-8	Tetryl		0.0784	0.157	0.314	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		1.961	2.123	108	40 - 145	
1-Chloro-3-nitrobenzene [2C]		1.961	2.015	103	40 - 145	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-EB-120110-IS

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Water Laboratory ID: 1012036-16 File ID: 108V0801.D
 Sampled: 12/01/10 16:05 Prepared: 12/06/10 07:45 Analyzed: 12/06/10 21:40
 Solids: Preparation: EXT EXPL W Dilution: 1
 Batch: 0L06002 Sequence: 0L34115 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0800	0.160	0.320	U
99-65-0	1,3-Dinitrobenzene		0.0800	0.160	0.320	U
118-96-7	2,4,6-Trinitrotoluene		0.0800	0.160	0.320	U
121-14-2	2,4-Dinitrotoluene		0.0800	0.160	0.320	U
606-20-2	2,6-Dinitrotoluene		0.0800	0.160	0.320	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0800	0.160	0.320	U
88-72-2	2-Nitrotoluene		0.0800	0.160	0.320	U
99-08-1	3-Nitrotoluene		0.0800	0.160	0.320	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0800	0.160	0.320	U
99-99-0	4-Nitrotoluene		0.0800	0.160	0.320	U
2691-41-0	HMX		0.0800	0.160	0.320	U
98-95-3	Nitrobenzene		0.0800	0.160	0.320	U
55-63-0	Nitroglycerin		0.200	0.400	0.800	U
78-11-5	PETN		0.200	0.400	0.800	U
121-82-4	RDX	0.238	0.0800	0.160	0.320	JP
479-45-8	Tetryl		0.0800	0.160	0.320	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		2.000	2.154	108	40 - 145	
1-Chloro-3-nitrobenzene [2C]		2.000	2.046	102	40 - 145	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-IS11-4-6-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-17 File ID: 143V4301.D
 Sampled: 12/02/10 08:50 Prepared: 12/08/10 11:20 Analyzed: 12/10/10 10:57
 Solids: Preparation: EXT_EXPL_S Dilution: 1
 Batch: 0L07006 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0198	0.0396	0.0594	U
99-65-0	1,3-Dinitrobenzene		0.0198	0.0396	0.0594	U
118-96-7	2,4,6-Trinitrotoluene		0.0198	0.0396	0.0594	U
121-14-2	2,4-Dinitrotoluene		0.0198	0.0396	0.0594	U
606-20-2	2,6-Dinitrotoluene		0.0198	0.0396	0.0594	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0198	0.0396	0.0594	U
88-72-2	2-Nitrotoluene		0.0198	0.0396	0.0594	U
99-08-1	3-Nitrotoluene		0.0198	0.0396	0.0594	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0198	0.0396	0.0594	U
99-99-0	4-Nitrotoluene		0.0198	0.0396	0.0594	U
2691-41-0	HMX		0.0198	0.0396	0.0594	U
98-95-3	Nitrobenzene		0.0198	0.0396	0.0594	U
55-63-0	Nitroglycerin		0.0990	0.198	0.297	U
78-11-5	PETN		0.0990	0.198	0.297	U
121-82-4	RDX		0.0198	0.0396	0.0594	U
479-45-8	Tetryl	0.0277	0.0198	0.0396	0.0594	J
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1980	0.2145	108	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1980	0.2228	113	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-IS12-5-7-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-18 File ID: 104V0401.D
 Sampled: 12/02/10 10:50 Prepared: 12/13/10 17:10 Analyzed: 12/14/10 18:11
 Solids: Preparation: EXT_EXPL S Dilution: 1
 Batch: 0L08006 Sequence: 0L34915 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene		0.0200	0.0400	0.0600	U
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	U
121-14-2	2,4-Dinitrotoluene		0.0200	0.0400	0.0600	U
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0200	0.0400	0.0600	U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2151	108	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2207	110	55 - 140	

* Values outside of QC limits

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ANALYSIS DATA SHEET

MR17-SS12-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-19 File ID: 105V0501.D
 Sampled: 12/02/10 08:30 Prepared: 12/13/10 17:10 Analyzed: 12/14/10 18:43
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L08006 Sequence: 0L34915 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene	0.0320	0.0200	0.0400	0.0600	J
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	UX J
121-14-2	2,4-Dinitrotoluene		0.0200	0.0400	0.0600	UX J
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0200	0.0400	0.0600	U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2018	101	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2048	102	55 - 140	

* Values outside of QC limits

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ANALYSIS DATA SHEET

MR17-SS13-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-20 File ID: 108V0801.D
 Sampled: 12/02/10 09:00 Prepared: 12/13/10 17:10 Analyzed: 12/14/10 20:20
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L08006 Sequence: 0L34915 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene	0.0280	0.0200	0.0400	0.0600	JY
99-65-0	1,3-Dinitrobenzene		0.0200	0.0400	0.0600	U
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	UX J
121-14-2	2,4-Dinitrotoluene	0.0400 0.0253	0.0200	0.0400	0.0600	JPM Y U
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0200	0.0400	0.0600	U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene	0.0400 0.0330	0.0200	0.0400	0.0600	JPM U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene	0.134	0.0200	0.0400	0.0600	Z-01a J
2691-41-0	HMX	0.0400 0.0209	0.0200	0.0400	0.0600	JPM U
98-95-3	Nitrobenzene [2C]	0.221	0.0200	0.0400	0.0600	JPM U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN	0.998	0.100	0.200	0.300	
121-82-4	RDX [2C]	0.0724	0.0200	0.0400	0.0600	JPM U
479-45-8	Tetryl	0.152	0.0200	0.0400	0.0600	JPM U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.1902	95.1	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2069	103	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-SS16-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-21File ID: 109V0901.DSampled: 12/02/10 09:10Prepared: 12/13/10 17:10Analyzed: 12/14/10 20:52

Solids:

Preparation: EXT_EXPL_SDilution: 1Batch: 0L08006Sequence: 0L34915Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene		0.0200	0.0400	0.0600	U
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	UX U
121-14-2	2,4-Dinitrotoluene		0.0200	0.0400	0.0600	UY U
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.0763	0.0200	0.0400	0.0600	PZ-01c U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene	0.484	0.0200	0.0400	0.0600	U U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX	0.0410 0.0287	0.0200	0.0400	0.0600	IPM U
98-95-3	Nitrobenzene	3.23	0.0200	0.0400	0.0600	U U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN	2.62	0.100	0.200	0.300	U U
121-82-4	RDX	0.292	0.0200	0.0400	0.0600	U U
479-45-8	Tetryl [2C]	0.113	0.0200	0.0400	0.0600	PM U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2139	107	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2199	110	55 - 140	

* Values outside of QC limits

SMM
2/12/2011

ANALYSIS DATA SHEET

MR17-SS15-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-22File ID: 110V1001.DSampled: 12/02/10 09:25Prepared: 12/13/10 17:10Analyzed: 12/14/10 21:25

Solids:

Preparation: EXT EXPL SDilution: 1Batch: 0L08006Sequence: 0L34915Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene	0.0234 0.0400	0.0200	0.0400	0.0600	JP U
99-65-0	1,3-Dinitrobenzene	0.0291	0.0200	0.0400	0.0600	JP
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	UX J
121-14-2	2,4-Dinitrotoluene	0.0337 0.0400	0.0200	0.0400	0.0600	JP Y U
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0200	0.0400	0.0600	U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2233	112	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2183	109	55 - 140	

* Values outside of QC limits

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2/12/2011

ANALYSIS DATA SHEET

MR17-SS14-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-23 File ID: 111V1101.D
 Sampled: 12/02/10 09:40 Prepared: 12/13/10 17:10 Analyzed: 12/14/10 21:57
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L08006 Sequence: 0L34915 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene	0.0956	0.0200	0.0400	0.0600	U <i>2C</i>
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	U <i>2C</i>
121-14-2	2,4-Dinitrotoluene	0.127	0.0200	0.0400	0.0600	U <i>2C</i>
606-20-2	2,6-Dinitrotoluene	0.117	0.0200	0.0400	0.0600	U <i>2C</i>
35572-78-2	2-Amino-4,6-dinitrotoluene	0.0436	0.0200	0.0400	0.0600	U <i>2C</i>
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene	0.0703	0.0200	0.0400	0.0600	U <i>2C</i>
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene	4.29	0.0200	0.0400	0.0600	U <i>2C</i>
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN	1.06	0.100	0.200	0.300	U
121-82-4	RDX	0.0789	0.0200	0.0400	0.0600	U
479-45-8	Tetryl	1.06	0.0200	0.0400	0.0600	U <i>2C</i>
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2072	104	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2106	105	55 - 140	

* Values outside of QC limits

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AK/2011

ANALYSIS DATA SHEET

MR17-SS18-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-24 File ID: 112V1201.D
 Sampled: 12/02/10 09:55 Prepared: 12/13/10 17:10 Analyzed: 12/14/10 22:29
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L08006 Sequence: 0L34915 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene	<i>0.0470</i> 0.0271	0.0200	0.0400	0.0600	JP <i>SC</i>
118-96-7	2,4,6-Trinitrotoluene	0.0364	0.0200	0.0400	0.0600	JY
121-14-2	2,4-Dinitrotoluene	<i>0.0440</i> 0.0348	0.0200	0.0400	0.0600	JPM, Y <i>SC</i>
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0200	0.0400	0.0600	U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.3000	150	55 - 140	*
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2374	119	55 - 140	

* Values outside of QC limits

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2/12/2011

ANALYSIS DATA SHEET

MR17-SS17-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-25File ID: 113V1301.DSampled: 12/02/10 10:10Prepared: 12/13/10 17:10Analyzed: 12/14/10 23:02

Solids:

Preparation: EXT EXPL SDilution: 1Batch: 0L08006Sequence: 0L34915Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene	0.0248 0.0400	0.0200	0.0400	0.0600	JPM U
99-65-0	1,3-Dinitrobenzene		0.0200	0.0400	0.0600	U
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	UX J
121-14-2	2,4-Dinitrotoluene	0.516	0.0200	0.0400	0.0600	X J
606-20-2	2,6-Dinitrotoluene	0.291	0.0200	0.0400	0.0600	P U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.0801	0.0200	0.0400	0.0600	PZ-01c U
88-72-2	2-Nitrotoluene	0.0674	0.0200	0.0400	0.0600	Z-01b J
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene	0.352	0.0200	0.0400	0.0600	P U
2691-41-0	HMX	0.0459	0.0200	0.0400	0.0600	JPM U
98-95-3	Nitrobenzene	0.0890	0.0200	0.0400	0.0600	
55-63-0	Nitroglycerin	0.206	0.100	0.200	0.300	J
78-11-5	PETN	0.102	0.100	0.200	0.300	JPM U
121-82-4	RDX	0.168	0.0200	0.0400	0.0600	P U
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2122	106	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2110	106	55 - 140	

* Values outside of QC limits

SMA
2/12/2011

ANALYSIS DATA SHEET

MR17-SS19-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-26File ID: 114V1401.DSampled: 12/02/10 10:55Prepared: 12/13/10 17:10Analyzed: 12/14/10 23:34

Solids:

Preparation: EXT EXPL SDilution: 1Batch: 0L08006Sequence: 0L34915Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene		0.0200	0.0400	0.0600	U
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	U
121-14-2	2,4-Dinitrotoluene		0.0200	0.0400	0.0600	U
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.104	0.0200	0.0400	0.0600	U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2064	103	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.1760	88.0	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-SS10-10D

Laboratory: Empirical Laboratories, LLC

SDG: 1012036

Client: CH2M Hill, Inc.

Project: Lejeune CTO-141 UXO-17

Matrix: Solid

Laboratory ID: 1012036-27

File ID: 115V1501.D

Sampled: 12/02/10 13:40

Prepared: 12/13/10 17:10

Analyzed: 12/15/10 00:06

Solids:

Preparation: EXT EXPL S

Dilution: 1

Batch: 0L08006

Sequence: 0L34915

Calibration: 0237002

Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene	0.0375	0.0200	0.0400	0.0600	J
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	UY
121-14-2	2,4-Dinitrotoluene		0.0200	0.0400	0.0600	UY
606-20-2	2,6-Dinitrotoluene	0.0245	0.0200	0.0400	0.0600	J
35572-78-2	2-Amino-4,6-dinitrotoluene	0.0751	0.0200	0.0400	0.0600	PM 2-01c
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene	0.0400	0.0214	0.0400	0.0600	JPM
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2449	122	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2206	110	55 - 140	

* Values outside of QC limits

SM
2/2/07

ANALYSIS DATA SHEET

MR17-EB-120210-SS

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Water Laboratory ID: 1012036-28 File ID: 109V0901.D
 Sampled: 12/01/10 14:45 Prepared: 12/06/10 07:45 Analyzed: 12/06/10 22:12
 Solids: Preparation: EXT EXPL W Dilution: 1
 Batch: 0L06002 Sequence: 0L34115 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0755	0.151	0.302	U
99-65-0	1,3-Dinitrobenzene		0.0755	0.151	0.302	U
118-96-7	2,4,6-Trinitrotoluene		0.0755	0.151	0.302	U
121-14-2	2,4-Dinitrotoluene		0.0755	0.151	0.302	U
606-20-2	2,6-Dinitrotoluene		0.0755	0.151	0.302	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0755	0.151	0.302	U
88-72-2	2-Nitrotoluene		0.0755	0.151	0.302	U
99-08-1	3-Nitrotoluene		0.0755	0.151	0.302	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0755	0.151	0.302	U
99-99-0	4-Nitrotoluene		0.0755	0.151	0.302	U
2691-41-0	HMX		0.0755	0.151	0.302	U
98-95-3	Nitrobenzene		0.0755	0.151	0.302	U
55-63-0	Nitroglycerin		0.189	0.377	0.755	U
78-11-5	PETN		0.189	0.377	0.755	U
121-82-4	RDX	0.228	0.0755	0.151	0.302	JP
479-45-8	Tetryl		0.0755	0.151	0.302	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		1.887	2.070	110	40 - 145	
1-Chloro-3-nitrobenzene [2C]		1.887	1.999	106	40 - 145	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-EB-120210-IS

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012036-29File ID: 110V1001.DSampled: 12/02/10 15:00Prepared: 12/06/10 07:45Analyzed: 12/06/10 22:45Solids: EXT EXPL WDilution: 1Batch: 0L06002Sequence: 0L34115Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0784	0.157	0.314	U
99-65-0	1,3-Dinitrobenzene		0.0784	0.157	0.314	U
118-96-7	2,4,6-Trinitrotoluene		0.0784	0.157	0.314	U
121-14-2	2,4-Dinitrotoluene		0.0784	0.157	0.314	U
606-20-2	2,6-Dinitrotoluene		0.0784	0.157	0.314	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0784	0.157	0.314	U
88-72-2	2-Nitrotoluene		0.0784	0.157	0.314	U
99-08-1	3-Nitrotoluene		0.0784	0.157	0.314	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0784	0.157	0.314	U
99-99-0	4-Nitrotoluene		0.0784	0.157	0.314	U
2691-41-0	HMX		0.0784	0.157	0.314	U
98-95-3	Nitrobenzene		0.0784	0.157	0.314	U
55-63-0	Nitroglycerin		0.196	0.392	0.784	U
78-11-5	PETN		0.196	0.392	0.784	U
121-82-4	RDX		0.0784	0.157	0.314	U
479-45-8	Tetryl		0.0784	0.157	0.314	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		1.961	2.184	111	40 - 145	
1-Chloro-3-nitrobenzene [2C]		1.961	2.027	103	40 - 145	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-IS15-1-3-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012036Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012036-30File ID: 117V1701.DSampled: 12/02/10 14:40Prepared: 12/13/10 17:10Analyzed: 12/15/10 01:11Solids: EXT EXPL SDilution: 1Batch: 0L08006Sequence: 0L34915Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene		0.0200	0.0400	0.0600	U
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	U/J
121-14-2	2,4-Dinitrotoluene		0.0200	0.0400	0.0600	U/J
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0200	0.0400	0.0600	U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2056	103	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2162	108	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-SS11-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-01 File ID: PERC000025.D
Sampled: 12/01/10 09:15 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 19:09
Solids: 89.70 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.669	2.23	5.57	U

SMS
2/12/07

ANALYSIS DATA SHEET

MR17-SS11D-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-02 File ID: PERC000026.D
Sampled: 12/01/10 09:20 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 19:27
Solids: 90.48 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.663	2.21	5.53	U

SMY
2/12/2011

ANALYSIS DATA SHEET

MR17-SS08-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-03 File ID: PERC000027.D
Sampled: 12/01/10 09:30 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 19:45
Solids: 82.68 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.726	2.42	6.05	U

SM
2/12/10

ANALYSIS DATA SHEET

MR17-SS08D-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-04 File ID: PERC000028.D
Sampled: 12/01/10 09:35 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 20:03
Solids: 79.26 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.757	2.52	6.31	U

SM
2/12/07

ANALYSIS DATA SHEET

MR17-SS06-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-05 File ID: PERC000029.D
Sampled: 12/01/10 12:30 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 20:21
Solids: 85.75 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.700	2.33	5.83	U

SM
2/12/07

ANALYSIS DATA SHEET

MR17-IS09-3-5-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-06 File ID: PERC000030.D
Sampled: 12/01/10 10:30 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 20:39
Solids: 90.18 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.665	2.22	5.54	U

SM
2/12/11

ANALYSIS DATA SHEET

MR17-IS10-3-5-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-07 File ID: PERC000031.D
 Sampled: 12/01/10 13:35 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 20:57
 Solids: 90.07 Preparation: LCMS PERC6850 S Dilution: 1
 Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.666	2.22	5.55	U

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ANALYSIS DATA SHEET

MR17-SS09-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-08 File ID: PERC000032.D
Sampled: 12/01/10 13:15 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 21:14
Solids: 92.15 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.651	2.17	5.43	U

Sum
2/12/11

ANALYSIS DATA SHEET

MR17-SS04-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-09 File ID: PERC000033.D
Sampled: 12/01/10 13:40 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 21:32
Solids: 92.66 Preparation: LCMS_PERC6850_S Dilution: 1
Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.648	2.16	5.40	U

ANALYSIS DATA SHEET

MR17-SS05-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-10 File ID: PERC000034.D
Sampled: 12/01/10 14:00 Prepared: 12/07/10 13:33 Analyzed: 12/08/10 21:50
Solids: 78.41 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L07016 Sequence: 0L34304 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.765	2.55	6.38	U

ANALYSIS DATA SHEET

MR17-SS02-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-11 File ID: PERC000043.D
Sampled: 12/01/10 14:10 Prepared: 12/09/10 13:30 Analyzed: 12/10/10 22:40
Solids: 87.17 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.688	2.29	5.74	U

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2/12/10

ANALYSIS DATA SHEET

MR17-SS01-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-12 File ID: PERC000044.D
Sampled: 12/01/10 14:25 Prepared: 12/09/10 13:30 Analyzed: 12/10/10 22:58
Solids: 91.36 Preparation: LCMS_PERC6850_S Dilution: 1
Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.657	2.19	5.47	U

5/12/2011

ANALYSIS DATA SHEET

MR17-SS03-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-13 File ID: PERC000045.D
 Sampled: 12/01/10 15:05 Prepared: 12/09/10 13:30 Analyzed: 12/10/10 23:16
 Solids: 92.68 Preparation: LCMS PERC6850 S Dilution: 1
 Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.647	2.16	5.39	U

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2/20/11

ANALYSIS DATA SHEET

MR17-SS07-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-14 File ID: PERC000046.D
Sampled: 12/01/10 15:20 Prepared: 12/09/10 13:30 Analyzed: 12/10/10 23:34
Solids: 79.49 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.755	2.52	6.29	U

501
2/12/10

ANALYSIS DATA SHEET

MR17-EB-120110-SS

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Water Laboratory ID: 1012036-15 File ID: PERC000012.D
Sampled: 12/01/10 16:00 Prepared: 12/08/10 11:06 Analyzed: 12/10/10 13:26
Solids: Preparation: LCMS_PREP6850 W Dilution: 1
Batch: 0L08008 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.0660	0.200	0.500	U



ANALYSIS DATA SHEET

MR17-EB-120110-IS

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Water Laboratory ID: 1012036-16 File ID: PERC000013.D
Sampled: 12/01/10 16:05 Prepared: 12/08/10 11:06 Analyzed: 12/10/10 13:44
Solids: Preparation: LCMS_PREP6850_W Dilution: 1
Batch: 0L08008 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.0660	0.200	0.500	U

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2/12/07

ANALYSIS DATA SHEET

MR17-IS11-4-6-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-17 File ID: PERC000047.D
Sampled: 12/02/10 08:50 Prepared: 12/09/10 13:30 Analyzed: 12/10/10 23:52
Solids: 85.87 Preparation: LCMS_PERC6850_S Dilution: 1
Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.699	2.33	5.82	U

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2/12/10

ANALYSIS DATA SHEET

MR17-IS12-5-7-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-18 File ID: PERC000054.D
Sampled: 12/02/10 10:50 Prepared: 12/09/10 13:30 Analyzed: 12/11/10 01:57
Solids: 87.08 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.689	2.30	5.74	U

ANALYSIS DATA SHEET

MR17-SS12-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-19 File ID: PERC000055.D
Sampled: 12/02/10 08:30 Prepared: 12/09/10 13:30 Analyzed: 12/11/10 02:15
Solids: 85.04 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.706	2.35	5.88	U



ANALYSIS DATA SHEET

MR17-SS13-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-20 File ID: PERC000056.D
Sampled: 12/02/10 09:00 Prepared: 12/09/10 13:30 Analyzed: 12/11/10 02:33
Solids: 85.05 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.705	2.35	5.88	U

ANALYSIS DATA SHEET

MR17-SS16-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-21 File ID: PERC000057.D
Sampled: 12/02/10 09:10 Prepared: 12/09/10 13:30 Analyzed: 12/11/10 02:51
Solids: 89.42 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.671	2.24	5.59	U

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2/12/07

ANALYSIS DATA SHEET

MR17-SS15-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-22 File ID: PERC000058.D
 Sampled: 12/02/10 09:25 Prepared: 12/09/10 13:30 Analyzed: 12/11/10 03:09
 Solids: 89.42 Preparation: LCMS_PERC6850 S Dilution: 1
 Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.671	2.24	5.59	U

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 2/12/07

ANALYSIS DATA SHEET

MR17-SS14-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-23 File ID: PERC000059.D
Sampled: 12/02/10 09:40 Prepared: 12/09/10 13:30 Analyzed: 12/11/10 03:26
Solids: 88.20 Preparation: LCMS_PERC6850_S Dilution: 1
Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.680	2.27	5.67	U

ANALYSIS DATA SHEET

MR17-SS18-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Solid Laboratory ID: 1012036-24 File ID: PERC000060.D
 Sampled: 12/02/10 09:55 Prepared: 12/09/10 13:30 Analyzed: 12/11/10 03:44
 Solids: 85.65 Preparation: LCMS PERC6850_S Dilution: 1
 Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.701	2.34	5.84	U

*Summ
2/12/2011*

ANALYSIS DATA SHEET

MR17-SS17-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-25 File ID: PERC000061.D
Sampled: 12/02/10 10:10 Prepared: 12/09/10 13:30 Analyzed: 12/11/10 04:02
Solids: 76.47 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.785	2.62	6.54	U

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2/12/10

ANALYSIS DATA SHEET

MR17-SS19-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-26 File ID: PERC000062.D
Sampled: 12/02/10 10:55 Prepared: 12/09/10 13:30 Analyzed: 12/11/10 04:20
Solids: 83.51 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.719	2.40	5.99	U

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2/12/2011

ANALYSIS DATA SHEET

MR17-SS10-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-27 File ID: PERC000063.D
Sampled: 12/02/10 13:40 Prepared: 12/09/10 13:30 Analyzed: 12/11/10 04:38
Solids: 84.75 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.708	2.36	5.90	U

SMS
2/2/07

ANALYSIS DATA SHEET

MR17-EB-120210-SS

Laboratory: Empirical Laboratories, LLC SDG: 1012036
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Water Laboratory ID: 1012036-28 File ID: PERC000014.D
 Sampled: 12/01/10 14:45 Prepared: 12/08/10 11:06 Analyzed: 12/10/10 14:02
 Solids: Preparation: LCMS PREP6850 W Dilution: 1
 Batch: 0L08008 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.0660	0.200	0.500	U

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ANALYSIS DATA SHEET

MR17-EB-120210-IS

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Water Laboratory ID: 1012036-29 File ID: PERC000015.D
Sampled: 12/02/10 15:00 Prepared: 12/08/10 11:06 Analyzed: 12/10/10 14:19
Solids: Preparation: LCMS PREP6850_W Dilution: 1
Batch: 0L08008 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.0660	0.200	0.500	U

SMY
2/12/2011

ANALYSIS DATA SHEET

MR17-IS15-1-3-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012036
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012036-30 File ID: PERC000067.D
Sampled: 12/02/10 14:40 Prepared: 12/09/10 13:30 Analyzed: 12/11/10 05:50
Solids: 89.27 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.672	2.24	5.60	U



Project: MCB Camp Lejeune (CTO-141), Jacksonville, NC
Laboratory: Empirical Laboratories, LLC
Sample Delivery Group: 1012055
Fraction: Organic
Matrix: Solid
Report Date: 2/21/2011

This analytical quality assurance report is based upon a review of analytical data generated for soil samples. Four equipment blanks, one field duplicate sample, and one matrix spike/matrix spike duplicate were submitted with the samples in this SDG. The sample locations, laboratory identification numbers, sample collection dates, sample matrix, and analyses performed are presented in Table 1.

The samples were analyzed for explosive compounds and perchlorate. The sample analyses were performed in accordance with the procedures outlined in "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997

All sample analyses have undergone an analytical quality assurance review to ensure adherence to the required protocols. Results have been validated or qualified according to general guidance provided in the "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", OSWER 9240.1-45 EPA 540-R-04-004, October 1999, and "Data Validation Standard Operating Procedures for Contract Laboratory Program Routine Analytical Services", USEPA Region IV, Revision 2.1, July 1999.


This document specifies procedures for validating data generated for CLP analyses. Therefore, the quality control requirements specified in the methods and associated acceptance criteria were also used to evaluate the non-CLP data. The parameters presented on the following page were evaluated.

-
- | | | |
|---|---|--|
| X | • | Data Completeness |
| X | • | Chain of Custody Documentation |
| X | • | Holding Times |
| X | • | Instrument Performance |
| X | • | Initial and Continuing Calibrations |
| X | • | Laboratory and Field Blank Analysis Results |
| X | • | Surrogate Compound Recoveries |
| X | • | Matrix Spike/Matrix Spike Duplicate Recoveries and Reproducibility |
| X | • | Field Duplicate Analysis Results |
| X | • | Laboratory Control Sample Results |
| X | • | Internal Standard Performance |
| X | • | Qualitative Identification |
| X | • | Quantitation/Reporting Limits |
-

X - Denotes parameter evaluated.

It is recommended that the data only be used according to the qualifiers presented, and discussed in this report. All other data should be considered qualitatively and quantitatively valid as reported by the laboratory, based on the items evaluated.

Report Approved By:


Shawne M. Rodgers
President


Date

1.0 DATA COMPLETENESS

The data package was complete.

2.0 CHAIN OF CUSTODY DOCUMENTATION

The chain of custody documentation was complete.

3.0 HOLDING TIMES

All criteria were met. No qualifiers were applied.

4.0 INSTRUMENT PERFORMANCE

All criteria were met. No qualifiers were applied.

5.0 INITIAL AND CONTINUING CALIBRATIONS

The results for 2, 4, 6-trinitrotoluene and 2, 4-dinitrotoluene for samples MR17-IS13-5-7-10D, MR17-SD01-10D, MR17-IS14-6-8-10D, and MR17-IS14D-6-8-10D should be considered quantitative estimates. The continuing calibration precision criterion was exceeded for these compounds. The lack of precision indicates instrument instability for these compounds. Positive 2, 4, 6-trinitrotoluene and 2, 4-dinitrotoluene results have been marked with "J" qualifiers to indicate that they are estimates. Reporting limits (RLs) are marked "UJ".

6.0 LABORATORY AND FIELD BLANK ANALYSIS RESULTS

All criteria were met. No qualifiers were applied.

7.0 SURROGATE COMPOUNDS

All criteria were met. No qualifiers were applied.

8.0 *MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND REPRODUCIBILITY*

All criteria were met. No qualifiers were applied.

9.0 *FIELD DUPLICATE RESULTS*

Duplicate samples MR17-IS14-6-8-10D and MR17-IS14D-6-8-10D were submitted to the laboratory evaluate sampling and analytical precision for those analytes determined to be present. Results for these duplicate samples are presented in Table 2. Precision is evaluated by calculating the relative percent difference (%RPD) between duplicate pair results. There are no USEPA-established acceptance criteria for field duplicate samples. EDQ uses internal acceptance criteria of thirty percent for volatile detected compounds (and 40 percent for extractable compounds) to evaluate soil field duplicate samples.

10.0 *LABORATORY CONTROL SAMPLE RESULTS*

All criteria were met. No qualifiers were applied.

11.0 *INTERNAL STANDARD PERFORMANCE*

All criteria were met. No qualifiers were applied.

12.0 *QUALITATIVE IDENTIFICATION*

All criteria were met. No qualifiers were applied.

13.0 *QUANTITATION/REPORTING LIMITS*

A lack of precision (greater than 40 %, but less than 70 % difference between results) was observed for the following explosive compounds on the dual chromatographic columns used for sample analysis. The laboratory for reporting purposes used the lower concentration for these compounds. Results less than the Reporting Limit (RL) been marked with "J" qualifiers to indicate that they are quantitative estimates. Results greater than the RL are marked "N".

Sample	Affected Compound
MR17-IS14D-6-8-10D	1,3,5-Trinitrobenzene, 1,3-Dinitrobenzene
MR17-EB-120310-SD	RDX

Poor precision (greater than 70 % difference between results) was observed for the explosive compounds presented below on the dual chromatographic columns used for sample analysis. As required by USEPA protocol, the laboratory for reporting purposes used the lower concentration for these compounds. The positive explosive results that are less than the RL should be considered non-detected at the RL. Affected sample results less than the limit of detection (LOD) were replaced by this numeric value and marked "U". Sample results greater than the LOD, but less than the RL were marked "U".

Sample	Affected Compounds
MR17-SD01-10D	1,3-Dinitrotoluene
MR17-IS14-6-8-10D	1,3-Dinitrotoluene
MR17-EB-120310-IS	RDX

As required by USEPA protocol, all compounds, which were qualitatively identified at concentrations below their respective RLs, have been marked with "J" qualifiers to indicate that they are quantitative estimates.

METHODOLOGY REFERENCES

Analysis	Reference
Explosive Compounds	Method 8330, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997
Nitroglycerin and PETN	Method 8332, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997
Perchlorate	Method 6850, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997

Table 1 Samples For Data Validation Review
MCB Camp Lejeune, North Carolina (CTO-141)

SAMPLE I.D.	LABORATORY I.D	SDG	DATE COLLECTED	ANALYSES PERFORMED				
				MATRIX	8330	6850	6010B	7470A 7471A
Sample_Name	Lab_Sample_ID	SDG	DateTime_Collected	Total Of SDG	8330	6850	6010B	7470A 7471A
MR17-IS13-5-7-10D	1012055-01	1012055	12/03/2010 10:45	41	X	X	X	X
MR17-SW01-10D	1012055-02	1012055	12/03/2010 08:45	42	X	2	X	X
MR17-SW01-10D	1012055-03	1012055	12/03/2010 08:45	23			X	X
MR17-SD01-10D	1012055-04	1012055	12/03/2010 09:30	41	X	X	X	X
MR17-IS14-6-8-10D	1012055-05	1012055	12/03/2010 13:15	41	X	X	X	X
MR17-IS14D-6-8-10D	1012055-06	1012055	12/03/2010 13:20	41	X	X	X	X
MR17-EB-120310-IS	1012055-07	1012055	12/03/2010 15:20	41	X	X	X	X
MR17-EB-120310-SW	1012055-08	1012055	12/03/2010 15:30	41	X	X	X	X
MR17-EB-120310-SW	1012055-09	1012055	12/03/2010 15:30	23			X	X
MR17-EB-120310-SD	1012055-10	1012055	12/03/2010 15:45	41	X	X	X	X

Table 2 Field Duplicate Sample Results for Organic Analyses
Soil Duplicate Samples MR17-IS14-6-8-10D and MR17-IS14D-6-8-10D

Analyte	Sample Result (µg/Kg)	Field Duplicate Result (µg/Kg)	RPD	ACTION
	MR17-IS14-6-8-10D	MR17-IS14D-6-8-10D		
1,3,5--Trinitrobenzene	ND	0.0411	J	NC
1,3-Dinitrobenzene	ND	0.01454	J	NC

ANALYSIS DATA SHEET

MR17-IS13-5-7-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012055
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012055-01 File ID: 118V1801.D
 Sampled: 12/03/10 10:45 Prepared: 12/13/10 17:10 Analyzed: 12/15/10 01:43
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L08006 Sequence: 0L34915 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene		0.0200	0.0400	0.0600	U
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	U
121-14-2	2,4-Dinitrotoluene		0.0200	0.0400	0.0600	U
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0200	0.0400	0.0600	U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2209	110	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2208	110	55 - 140	

* Values outside of QC limits

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ANALYSIS DATA SHEET

MR17-SW01-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012055Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012055-02File ID: 104V0401.DSampled: 12/03/10 08:45Prepared: 12/08/10 08:06Analyzed: 12/09/10 13:57

Solids:

Preparation: EXT EXPL WDilution: 1Batch: 0L07021Sequence: 0L34905Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0769	0.154	0.308	U
99-65-0	1,3-Dinitrobenzene		0.0769	0.154	0.308	U
118-96-7	2,4,6-Trinitrotoluene		0.0769	0.154	0.308	U
121-14-2	2,4-Dinitrotoluene		0.0769	0.154	0.308	U
606-20-2	2,6-Dinitrotoluene		0.0769	0.154	0.308	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0769	0.154	0.308	U
88-72-2	2-Nitrotoluene		0.0769	0.154	0.308	U
99-08-1	3-Nitrotoluene		0.0769	0.154	0.308	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0769	0.154	0.308	U
99-99-0	4-Nitrotoluene		0.0769	0.154	0.308	U
2691-41-0	HMX		0.0769	0.154	0.308	U
98-95-3	Nitrobenzene		0.0769	0.154	0.308	U
55-63-0	Nitroglycerin		0.192	0.385	0.769	U
78-11-5	PETN		0.192	0.385	0.769	U
121-82-4	RDX		0.0769	0.154	0.308	U
479-45-8	Tetryl	0.140	0.0769	0.154	0.308	J
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		1.923	1.906	99.1	40 - 145	
1-Chloro-3-nitrobenzene [2C]		1.923	1.842	95.8	40 - 145	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-SO01-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012055Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SolidLaboratory ID: 1012055-04File ID: 119V1901.DSampled: 12/03/10 09:30Prepared: 12/13/10 17:10Analyzed: 12/15/10 02:15

Solids:

Preparation: EXT EXPL SDilution: 1Batch: 0L08006Sequence: 0L34915Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene	0.0419	0.0200	0.0400	0.0600	U
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	U
121-14-2	2,4-Dinitrotoluene		0.0200	0.0400	0.0600	U
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0200	0.0400	0.0600	U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2023	101	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2172	109	55 - 140	

* Values outside of QC limits

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ANALYSIS DATA SHEET

MR17-IS14-6-8-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012055
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012055-05 File ID: 120V2001.D
 Sampled: 12/03/10 13:15 Prepared: 12/13/10 17:10 Analyzed: 12/15/10 02:48
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L08006 Sequence: 0L34915 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene	0.0677	0.0200	0.0400	0.0600	U
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	U
121-14-2	2,4-Dinitrotoluene		0.0200	0.0400	0.0600	U
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0200	0.0400	0.0600	U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2180	109	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2191	110	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-IS14D-6-8-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012055Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012055-06File ID: 121V2101.DSampled: 12/03/10 13:20Prepared: 12/13/10 17:10Analyzed: 12/15/10 03:20

Solids:

Preparation: EXT EXPL SDilution: 1Batch: 0L08006Sequence: 0L34915Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene	0.0411	0.0200	0.0400	0.0600	JF
99-65-0	1,3-Dinitrobenzene	0.0454	0.0200	0.0400	0.0600	JF
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	UX J
121-14-2	2,4-Dinitrotoluene		0.0200	0.0400	0.0600	UX J
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0200	0.0400	0.0600	U
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	U
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	U
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl		0.0200	0.0400	0.0600	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2108	105	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2180	109	55 - 140	

* Values outside of QC limits

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CCL
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ANALYSIS DATA SHEET

MR17-EB-120310-IS

Laboratory: Empirical Laboratories, LLCSDG: 1012055Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012055-07File ID: 105V0501.DSampled: 12/03/10 15:20Prepared: 12/08/10 08:06Analyzed: 12/09/10 14:29

Solids:

Preparation: EXT EXPL WDilution: 1Batch: 0L07021Sequence: 0L34905Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0842	0.168	0.337	U
99-65-0	1,3-Dinitrobenzene		0.0842	0.168	0.337	U
118-96-7	2,4,6-Trinitrotoluene		0.0842	0.168	0.337	U
121-14-2	2,4-Dinitrotoluene		0.0842	0.168	0.337	U
606-20-2	2,6-Dinitrotoluene		0.0842	0.168	0.337	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0842	0.168	0.337	U
88-72-2	2-Nitrotoluene		0.0842	0.168	0.337	U
99-08-1	3-Nitrotoluene		0.0842	0.168	0.337	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0842	0.168	0.337	U
99-99-0	4-Nitrotoluene		0.0842	0.168	0.337	U
2691-41-0	HMX		0.0842	0.168	0.337	U
98-95-3	Nitrobenzene		0.0842	0.168	0.337	U
55-63-0	Nitroglycerin		0.211	0.421	0.842	U
78-11-5	PETN		0.211	0.421	0.842	U
121-82-4	RDX	0.218	0.0842	0.168	0.337	U
479-45-8	Tetryl		0.0842	0.168	0.337	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		2.105	2.229	106	40 - 145	
1-Chloro-3-nitrobenzene [2C]		2.105	2.122	101	40 - 145	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-EB-120310-SW

Laboratory: Empirical Laboratories, LLCSDG: 1012055Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012055-08File ID: 106V0601.DSampled: 12/03/10 15:30Prepared: 12/08/10 08:06Analyzed: 12/09/10 15:02

Solids:

Preparation: EXT EXPL WDilution: 1Batch: 0L07021Sequence: 0L34905Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0784	0.157	0.314	U
99-65-0	1,3-Dinitrobenzene		0.0784	0.157	0.314	U
118-96-7	2,4,6-Trinitrotoluene		0.0784	0.157	0.314	U
121-14-2	2,4-Dinitrotoluene		0.0784	0.157	0.314	U
606-20-2	2,6-Dinitrotoluene		0.0784	0.157	0.314	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0784	0.157	0.314	U
88-72-2	2-Nitrotoluene		0.0784	0.157	0.314	U
99-08-1	3-Nitrotoluene		0.0784	0.157	0.314	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0784	0.157	0.314	U
99-99-0	4-Nitrotoluene		0.0784	0.157	0.314	U
2691-41-0	HMX		0.0784	0.157	0.314	U
98-95-3	Nitrobenzene		0.0784	0.157	0.314	U
55-63-0	Nitroglycerin		0.196	0.392	0.784	U
78-11-5	PETN		0.196	0.392	0.784	U
121-82-4	RDX	0.209	0.0784	0.157	0.314	J
479-45-8	Tetryl		0.0784	0.157	0.314	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		1.961	1.937	98.8	40 - 145	
1-Chloro-3-nitrobenzene [2C]		1.961	1.812	92.4	40 - 145	

* Values outside of QC limits

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ANALYSIS DATA SHEET

MR17-EB-120310-SD

Laboratory: Empirical Laboratories, LLCSDG: 1012055Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012055-10File ID: 107V0701.DSampled: 12/03/10 15:45Prepared: 12/08/10 08:06Analyzed: 12/09/10 15:34

Solids:

Preparation: EXT EXPL WDilution: 1Batch: 0L07021Sequence: 0L34905Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0941	0.188	0.376	U
99-65-0	1,3-Dinitrobenzene		0.0941	0.188	0.376	U
118-96-7	2,4,6-Trinitrotoluene		0.0941	0.188	0.376	U
121-14-2	2,4-Dinitrotoluene		0.0941	0.188	0.376	U
606-20-2	2,6-Dinitrotoluene		0.0941	0.188	0.376	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0941	0.188	0.376	U
88-72-2	2-Nitrotoluene		0.0941	0.188	0.376	U
99-08-1	3-Nitrotoluene		0.0941	0.188	0.376	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0941	0.188	0.376	U
99-99-0	4-Nitrotoluene		0.0941	0.188	0.376	U
2691-41-0	HMX		0.0941	0.188	0.376	U
98-95-3	Nitrobenzene		0.0941	0.188	0.376	U
55-63-0	Nitroglycerin		0.235	0.471	0.941	U
78-11-5	PETN		0.235	0.471	0.941	U
121-82-4	RDX	0.260	0.0941	0.188	0.376	U
479-45-8	Tetryl		0.0941	0.188	0.376	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		2.353	2.748	117	40 - 145	
1-Chloro-3-nitrobenzene [2C]		2.353	2.638	112	40 - 145	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-IS13-5-7-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012055
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Soil Laboratory ID: 1012055-01 File ID: PERC000070.D
Sampled: 12/03/10 10:45 Prepared: 12/09/10 13:30 Analyzed: 12/11/10 06:43
Solids: 83.77 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.716	2.39	5.97	U

Summ
2/21/07

ANALYSIS DATA SHEET

MR17-SW01-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012055
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Water Laboratory ID: 1012055-02 File ID: PERC000011.D
Sampled: 12/03/10 08:45 Prepared: 12/14/10 14:54 Analyzed: 12/14/10 20:16
Solids: Preparation: LCMS PREP6850 W Dilution: 1
Batch: 0L14017 Sequence: 0L35104 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	42.0	0.0660	0.200	0.500	E X

LR

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4/21/11

ANALYSIS DATA SHEET

MR17-SW01-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012055
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Water Laboratory ID: 1012055-02RE1 File ID: PERC000011.D
Sampled: 12/03/10 08:45 Prepared: 12/14/10 14:54 Analyzed: 12/16/10 20:10
Solids: Preparation: LCMS PREP6850 W Dilution: 10
Batch: 0L14017 Sequence: 0L35110 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	42.1	0.660	2.00	5.00	D

SM
2/2/11

ANALYSIS DATA SHEET

MR17-SO01-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012055
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Solid Laboratory ID: 1012055-04 File ID: PERC000071.D
Sampled: 12/03/10 09:30 Prepared: 12/09/10 13:30 Analyzed: 12/11/10 07:01
Solids: 76.24 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	1.04	0.787	2.62	6.56	J

Summ
2/21/2011

ANALYSIS DATA SHEET

MR17-IS14-6-8-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012055
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Soil Laboratory ID: 1012055-05 File ID: PERC000072.D
Sampled: 12/03/10 13:15 Prepared: 12/09/10 13:30 Analyzed: 12/11/10 07:19
Solids: 83.72 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.717	2.39	5.97	U



ANALYSIS DATA SHEET

MR17-IS14D-6-8-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012055
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Soil Laboratory ID: 1012055-06 File ID: PERC000073.D
Sampled: 12/03/10 13:20 Prepared: 12/09/10 13:30 Analyzed: 12/11/10 07:37
Solids: 83.06 Preparation: LCMS PERC6850 S Dilution: 1
Batch: 0L09022 Sequence: 0L34804 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.722	2.41	6.02	U

SM
12/11/10

ANALYSIS DATA SHEET

MR17-EB-120310-IS

Laboratory: Empirical Laboratories, LLC SDG: 1012055
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Water Laboratory ID: 1012055-07 File ID: PERC000013.D
Sampled: 12/03/10 15:20 Prepared: 12/14/10 14:54 Analyzed: 12/14/10 20:52
Solids: Preparation: LCMS PREP6850 W Dilution: 1
Batch: 0L14017 Sequence: 0L35104 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.0660	0.200	0.500	U



ANALYSIS DATA SHEET

MR17-EB-120310-SW

Laboratory: Empirical Laboratories, LLC SDG: 1012055
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Water Laboratory ID: 1012055-08 File ID: PERC000014.D
Sampled: 12/03/10 15:30 Prepared: 12/14/10 14:54 Analyzed: 12/14/10 21:10
Solids: Preparation: LCMS PREP6850 W Dilution: 1
Batch: 0L14017 Sequence: 0L35104 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.0660	0.200	0.500	U

SM
2/21/2011

ANALYSIS DATA SHEET

MR17-EB-120310-SD

Laboratory: Empirical Laboratories, LLC SDG: 1012055
Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
Matrix: Water Laboratory ID: 1012055-10 File ID: PERC000015.D
Sampled: 12/03/10 15:45 Prepared: 12/14/10 14:54 Analyzed: 12/14/10 21:28
Solids: Preparation: LCMS PREP6850 W Dilution: 1
Batch: 0L14017 Sequence: 0L35104 Calibration: 0243002 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.0660	0.200	0.500	U

SMR
2/21/2011

Project: MCB Camp Lejeune (CTO-141), Jacksonville, NC
Laboratory: Empirical Laboratories, LLC
Sample Delivery Group: 1012060
Fraction: Organic
Matrix: Solid and Aqueous
Report Date: 2/21/2011

This analytical quality assurance report is based upon a review of analytical data generated for soil and groundwater samples. Two equipment blanks, one field blanks, two field duplicate samples, and one matrix spike/matrix spike duplicate were submitted with the samples in this SDG. The sample locations, laboratory identification numbers, sample collection dates, sample matrix, and analyses performed are presented in Table 1.

The samples were analyzed for explosive compounds and perchlorate. The sample analyses were performed in accordance with the procedures outlined in "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997

All sample analyses have undergone an analytical quality assurance review to ensure adherence to the required protocols. Results have been validated or qualified according to general guidance provided in the "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", OSWER 9240.1-45 EPA 540-R-04-004, October 1999, and "Data Validation Standard Operating Procedures for Contract Laboratory Program Routine Analytical Services", USEPA Region IV, Revision 2.1, July 1999.

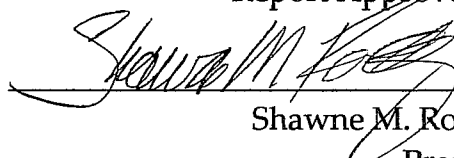
This document specifies procedures for validating data generated for CLP analyses. Therefore, the quality control requirements specified in the methods and associated acceptance criteria were also used to evaluate the non-CLP data. The parameters presented on the following page were evaluated.

-
- X • Data Completeness
 - X • Chain of Custody Documentation
 - X • Holding Times
 - X • Instrument Performance
 - X • Initial and Continuing Calibrations
 - X • Laboratory and Field Blank Analysis Results
 - X • Surrogate Compound Recoveries
 - X • Matrix Spike/Matrix Spike Duplicate Recoveries and Reproducibility
 - X • Field Duplicate Analysis Results
 - X • Laboratory Control Sample Results
 - X • Internal Standard Performance
 - X • Qualitative Identification
 - X • Quantitation/Reporting Limits
-

X - Denotes parameter evaluated.

It is recommended that the data only be used according to the qualifiers presented, and discussed in this report. All other data should be considered qualitatively and quantitatively valid as reported by the laboratory, based on the items evaluated.

Report Approved By:


Shawne M. Rodgers
President


Date

1.0 DATA COMPLETENESS

The data package was complete.

2.0 CHAIN OF CUSTODY DOCUMENTATION

The chain of custody documentation was complete.

3.0 HOLDING TIMES

All criteria were met. No qualifiers were applied.

4.0 INSTRUMENT PERFORMANCE

All criteria were met. No qualifiers were applied.

5.0 INITIAL AND CONTINUING CALIBRATIONS

All criteria were met. No qualifiers were applied.

6.0 LABORATORY AND FIELD BLANK ANALYSIS RESULTS

All criteria were met. No qualifiers were applied.

7.0 SURROGATE COMPOUNDS

All criteria were met. No qualifiers were applied.

8.0 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND REPRODUCIBILITY

All criteria were met. No qualifiers were applied.

9.0 FIELD DUPLICATE RESULTS

Duplicate samples MR17-IS07-5-7-10D and MR17-IS07D-5-7-10D, and MR17-MW15-10D and MR17-MW15D-10D were submitted to the laboratory evaluate sampling and analytical precision for those analytes determined to be present. Results for duplicate samples MR17-IS07-5-7-10D and MR17-IS07D-5-7-10D are presented in Table 3. There were no positive results for samples MR17-MW15-10D and MR17-MW15D-10D. Precision is evaluated by calculating the relative percent difference (%RPD) between duplicate pair results. There are no USEPA-established acceptance criteria for field duplicate samples. EDQ uses internal acceptance criteria of thirty percent for volatile detected compounds (and 40 percent for extractable compounds) to evaluate soil field duplicate samples.

10.0 *LABORATORY CONTROL SAMPLE RESULTS*

All criteria were met. No qualifiers were applied.

11.0 *INTERNAL STANDARD PERFORMANCE*

All criteria were met. No qualifiers were applied.

12.0 *QUALITATIVE IDENTIFICATION*

All criteria were met. No qualifiers were applied.

13.0 *QUANTITATION/REPORTING LIMITS*

A lack of precision (greater than 40 %, but less than 70 % difference between results) was observed for the following explosive compounds on the dual chromatographic columns used for sample analysis. The laboratory for reporting purposes used the lower concentration for these compounds. Results less than the Reporting Limit (RL) been marked with "J" qualifiers to indicate that they are quantitative estimates. Results greater than the RL are marked "N".

Sample	Affected Compound
MR17-IS07-5-7-10D	4-Amino-2,6-dinitrotoluene, 4-Nitrotoluene
MR17-IS04-3-5-10D	Tetryl
MW17-EB120610-MW	RDX
MW17-FB120610-10D	RDX

Poor precision (greater than 70 % difference between results) was observed for the explosive compounds presented in Table 2 on the dual chromatographic columns used for sample analysis. As required by USEPA protocol, the laboratory for reporting purposes used the lower concentration for these compounds. The positive explosive results that are less than the RL should be considered non-detected at the RL. Affected sample results less than the limit of detection (LOD) were replaced by this numeric value and marked "U". Sample results greater than the LOD, but less than the RL were marked "U".

The following positive results should be considered biased high quantitative estimates. There was a lack of separation between the peaks for the explosive compounds and those of another on the confirmation chromatographic column. The results have been marked with "J" qualifiers to indicate that they are estimates.

Sample	Coeluting Peak	Affected Compound
MR17-IS07-5-7-10D	2-Amino-4,6-dinitrotoluene	4-Nitrotoluene

As required by USEPA protocol, all compounds, which were qualitatively identified at concentrations below their respective RLs, have been marked with "J" qualifiers to indicate that they are quantitative estimates.

METHODOLOGY REFERENCES

Analysis	Reference
Explosive Compounds	Method 8330, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997
Nitroglycerin and PETN	Method 8332, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997
Perchlorate	Method 6850, "Test Methods for Evaluating Solid Wastes", SW-846, third edition, Promulgated Updates II, IIA, and III, June 1997

Table 1 Samples For Data Validation Review
MCB Camp Lejeune, North Carolina (CTO-141)

SAMPLE I.D.	LABORATORY ID	SDG	DATE COLLECTED	ANALYSES PERFORMED				
				MATRIX	8330	6850	6010B	7470A
Sample_Name	Lab_Sample_ID	SDG	DateTime_Collected	Total Of SDG	8330	6850	6010B	7470A
MR17-IS07-5-7-10D	1012060-01	1012060	12/04/2010 11:35	Soil	X	X	X	7471A
MR17-IS07D-5-7-10D	1012060-02	1012060	12/04/2010 11:40	Soil	X	X	X	X
MR17-IS06-8-10-10D	1012060-03	1012060	12/04/2010 12:05	Soil	X	X	X	X
MR17-IS08-6-8-10D	1012060-04	1012060	12/04/2010 12:45	Soil	X	X	X	X
MR17-IS04-3-5-10D	1012060-05	1012060	12/04/2010 12:55	Soil	X	X	X	X
MR17-IS05-1-3-10D	1012060-06	1012060	12/04/2010 13:10	Soil	X	X	X	X
MR17-IS03-3-5-10D	1012060-07	1012060	12/04/2010 13:30	Soil	X	X	X	X
MR17-IS02-4-6-10D	1012060-08	1012060	12/04/2010 13:50	Soil	X	X	X	X
MR17-IS01-2-4-10D	1012060-09	1012060	12/04/2010 14:10	Soil	X	X	X	X
MR17-EB120410-IS	1012060-10	1012060	12/04/2010 16:30	Equipment Blank	X	X	X	X
MR17-MW09-10D	1012060-11	1012060	12/05/2010 12:45	Groundwater	X	X	X	X
MR17-MW15-10D	1012060-13	1012060	12/05/2010 14:00	Groundwater	X	X	X	X
MR17-MW15D-10D	1012060-14	1012060	12/05/2010 14:05	Groundwater	X	X	X	X
MR17-EB120510-MW	1012060-15	1012060	12/05/2010 15:00	Equipment Blank	X	X	X	X
MR17-MW14-10D	1012060-16	1012060	12/06/2010 08:10	Groundwater	X	X	X	X
MR17-MW13-10D	1012060-17	1012060	12/06/2010 09:20	Groundwater	X	X	X	X
MW17-MW10-10D	1012060-18	1012060	12/06/2010 11:20	Groundwater	X	X	X	X
MW17-MW11-10D	1012060-19	1012060	12/06/2010 12:25	Groundwater	X	X	X	X
MW17-MW12-10D	1012060-20	1012060	12/06/2010 13:25	Groundwater	X	X	X	X
MW17-EB120610-MW	1012060-21	1012060	12/06/2010 13:45	Equipment Blank	X	X	X	X
MW17-FB120610-10D	1012060-22	1012060	12/06/2010 14:00	Field Blank	X	X	X	X
MW17-MW10-10D	1012060-23	1012060	12/06/2010 11:20	Groundwater	X	X	X	X
MW17-MW11-10D	1012060-24	1012060	12/06/2010 12:25	Groundwater	X	X	X	X
MW17-MW12-10D	1012060-25	1012060	12/06/2010 13:25	Groundwater	X	X	X	X
MW17-EB120610-MW	1012060-26	1012060	12/06/2010 13:45	Equipment Blank	X	X	X	X
MW17-FB120610-10D	1012060-27	1012060	12/06/2010 14:00	Field Blank	X	X	X	X

Table 2
Explosive Results Qualified Due to Dual Column Imprecision

Sample	Affected Compounds
MR17-IS07-5-7-10D	1,3,5-Trinitrobenzene, Tetrahydro-1,3,5-trinitrobenzene, RDX
MR17-IS07D-5-7-10D	
MR17-MW15-10D	
MR17-MW15D-10D	3-Nitrotoluene
MW17-MW10-10D	3-Nitrotoluene
MW17-EB120610-MW	2-Amino-4,6-dinitrotoluene, HMX, Nitroglycerin
MW17-FB120610-10D	Nitrobenzene
	Nitrobenzene, Nitroglycerin

ANALYSIS DATA SHEET

MR17-IS07-5-7-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012060-01File ID: 104V0401.DSampled: 12/04/10 11:35Prepared: 12/16/10 14:50Analyzed: 12/22/10 18:50

Solids:

Preparation: EXT EXPL SDilution: 1Batch: 0L14011Sequence: 0L36306Calibration: 0362005Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene	0.0642	0.0198	0.0396	0.0594	UX 2C
99-65-0	1,3-Dinitrobenzene		0.0198	0.0396	0.0594	U
118-96-7	2,4,6-Trinitrotoluene		0.0198	0.0396	0.0594	UX
121-14-2	2,4-Dinitrotoluene		0.0198	0.0396	0.0594	UX
606-20-2	2,6-Dinitrotoluene		0.0198	0.0396	0.0594	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.0467	0.0198	0.0396	0.0594	UX-01, J 01
88-72-2	2-Nitrotoluene		0.0198	0.0396	0.0594	U
99-08-1	3-Nitrotoluene		0.0198	0.0396	0.0594	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.0330	0.0198	0.0396	0.0594	UX 2C
99-99-0	4-Nitrotoluene	0.100	0.0198	0.0396	0.0594	UX 2C
2691-41-0	HMX		0.0198	0.0396	0.0594	U
98-95-3	Nitrobenzene		0.0198	0.0396	0.0594	UX
55-63-0	Nitroglycerin		0.0990	0.198	0.297	U
78-11-5	PETN		0.0990	0.198	0.297	U
121-82-4	RDX		0.0198	0.0396	0.0594	U
479-45-8	Tetryl	<i>0.0396</i>	<i>0.0345</i>	0.0198	0.0396	UX 2C
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1980	0.2147	108	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1980	0.2880	<i>145</i>	55 - 140	*

* Values outside of QC limits

*already qual**SM
2/21/2011*

ANALYSIS DATA SHEET

MR17-IS07D-5-7-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012060
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012060-02 File ID: 105V0501.D
 Sampled: 12/04/10 11:40 Prepared: 12/16/10 14:50 Analyzed: 12/22/10 19:23
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L14011 Sequence: 0L36306 Calibration: 0362005 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0198	0.0396	0.0594	U
99-65-0	1,3-Dinitrobenzene		0.0198	0.0396	0.0594	U
118-96-7	2,4,6-Trinitrotoluene		0.0198	0.0396	0.0594	UX
121-14-2	2,4-Dinitrotoluene		0.0198	0.0396	0.0594	UX
606-20-2	2,6-Dinitrotoluene		0.0198	0.0396	0.0594	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0198	0.0396	0.0594	UX
88-72-2	2-Nitrotoluene		0.0198	0.0396	0.0594	U
99-08-1	3-Nitrotoluene		0.0198	0.0396	0.0594	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0198	0.0396	0.0594	UX
99-99-0	4-Nitrotoluene		0.0198	0.0396	0.0594	U
2691-41-0	HMX		0.0198	0.0396	0.0594	U
98-95-3	Nitrobenzene		0.0198	0.0396	0.0594	UX
55-63-0	Nitroglycerin		0.0990	0.198	0.297	U
78-11-5	PETN		0.0990	0.198	0.297	U
121-82-4	RDX [2C]	0.0396	0.0198	0.0396	0.0594	IPM
479-45-8	Tetryl	0.0253	0.0198	0.0396	0.0594	UX
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1980	0.2113	107	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1980	0.2318	117	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-IS06-8-10-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012060
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012060-03 File ID: 106V0601.D
 Sampled: 12/04/10 12:05 Prepared: 12/16/10 14:50 Analyzed: 12/22/10 19:55
 Solids: Preparation: EXT_EXPL_S Dilution: 1
 Batch: 0L14011 Sequence: 0L36306 Calibration: 0362005 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0194	0.0388	0.0583	U
99-65-0	1,3-Dinitrobenzene		0.0194	0.0388	0.0583	U
118-96-7	2,4,6-Trinitrotoluene		0.0194	0.0388	0.0583	UX
121-14-2	2,4-Dinitrotoluene		0.0194	0.0388	0.0583	UX, Q, N
606-20-2	2,6-Dinitrotoluene		0.0194	0.0388	0.0583	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0194	0.0388	0.0583	UX
88-72-2	2-Nitrotoluene		0.0194	0.0388	0.0583	U
99-08-1	3-Nitrotoluene		0.0194	0.0388	0.0583	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0194	0.0388	0.0583	UX, Q
99-99-0	4-Nitrotoluene		0.0194	0.0388	0.0583	U
2691-41-0	HMX		0.0194	0.0388	0.0583	U
98-95-3	Nitrobenzene		0.0194	0.0388	0.0583	UX
55-63-0	Nitroglycerin		0.0971	0.194	0.291	U
78-11-5	PETN		0.0971	0.194	0.291	U
121-82-4	RDX		0.0194	0.0388	0.0583	U
479-45-8	Tetryl		0.0194	0.0388	0.0583	UX
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1942	0.1957	101	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1942	0.2258	116	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-IS08-6-8-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012060
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012060-04 File ID: 109V0901.D
 Sampled: 12/04/10 12:45 Prepared: 12/16/10 14:50 Analyzed: 12/22/10 21:32
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L14011 Sequence: 0L36306 Calibration: 0362005 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0200	0.0400	0.0600	U
99-65-0	1,3-Dinitrobenzene		0.0200	0.0400	0.0600	U
118-96-7	2,4,6-Trinitrotoluene		0.0200	0.0400	0.0600	UX
121-14-2	2,4-Dinitrotoluene		0.0200	0.0400	0.0600	UX
606-20-2	2,6-Dinitrotoluene		0.0200	0.0400	0.0600	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0200	0.0400	0.0600	UX
88-72-2	2-Nitrotoluene		0.0200	0.0400	0.0600	U
99-08-1	3-Nitrotoluene		0.0200	0.0400	0.0600	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0200	0.0400	0.0600	UX
99-99-0	4-Nitrotoluene		0.0200	0.0400	0.0600	U
2691-41-0	HMX		0.0200	0.0400	0.0600	U
98-95-3	Nitrobenzene		0.0200	0.0400	0.0600	UX
55-63-0	Nitroglycerin		0.100	0.200	0.300	U
78-11-5	PETN		0.100	0.200	0.300	U
121-82-4	RDX		0.0200	0.0400	0.0600	U
479-45-8	Tetryl		0.0200	0.0400	0.0600	UX
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.2000	0.2274	114	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.2000	0.2364	118	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-IS04-3-5-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012060
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012060-05 File ID: 110V1001.D
 Sampled: 12/04/10 12:55 Prepared: 12/16/10 14:50 Analyzed: 12/22/10 22:04
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L14011 Sequence: 0L36306 Calibration: 0362005 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0198	0.0396	0.0594	U
99-65-0	1,3-Dinitrobenzene		0.0198	0.0396	0.0594	U
118-96-7	2,4,6-Trinitrotoluene		0.0198	0.0396	0.0594	UX
121-14-2	2,4-Dinitrotoluene		0.0198	0.0396	0.0594	UX, Q
606-20-2	2,6-Dinitrotoluene		0.0198	0.0396	0.0594	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0198	0.0396	0.0594	UX
88-72-2	2-Nitrotoluene		0.0198	0.0396	0.0594	U
99-08-1	3-Nitrotoluene		0.0198	0.0396	0.0594	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0198	0.0396	0.0594	UX, Q
99-99-0	4-Nitrotoluene		0.0198	0.0396	0.0594	U
2691-41-0	HMX		0.0198	0.0396	0.0594	U
98-95-3	Nitrobenzene		0.0198	0.0396	0.0594	UX
55-63-0	Nitroglycerin		0.0990	0.198	0.297	U
78-11-5	PETN		0.0990	0.198	0.297	U
121-82-4	RDX		0.0198	0.0396	0.0594	U
479-45-8	Tetryl	0.0335	0.0198	0.0396	0.0594	J, U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1980	0.2192	111	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1980	0.2279	115	55 - 140	

* Values outside of QC limits

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ANALYSIS DATA SHEET

MR17-IS05-1-3-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012060
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Soil Laboratory ID: 1012060-06 File ID: 111V1101.D
 Sampled: 12/04/10 13:10 Prepared: 12/16/10 14:50 Analyzed: 12/22/10 22:37
 Solids: Preparation: EXT EXPL S Dilution: 1
 Batch: 0L14011 Sequence: 0L36306 Calibration: 0362005 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0196	0.0392	0.0588	U
99-65-0	1,3-Dinitrobenzene		0.0196	0.0392	0.0588	U
118-96-7	2,4,6-Trinitrotoluene		0.0196	0.0392	0.0588	UX
121-14-2	2,4-Dinitrotoluene		0.0196	0.0392	0.0588	UX
606-20-2	2,6-Dinitrotoluene		0.0196	0.0392	0.0588	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0196	0.0392	0.0588	UX
88-72-2	2-Nitrotoluene		0.0196	0.0392	0.0588	U
99-08-1	3-Nitrotoluene		0.0196	0.0392	0.0588	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0196	0.0392	0.0588	UX
99-99-0	4-Nitrotoluene		0.0196	0.0392	0.0588	U
2691-41-0	HMX		0.0196	0.0392	0.0588	U
98-95-3	Nitrobenzene		0.0196	0.0392	0.0588	UX
55-63-0	Nitroglycerin		0.0980	0.196	0.294	U
78-11-5	PETN		0.0980	0.196	0.294	U
121-82-4	RDX		0.0196	0.0392	0.0588	U
479-45-8	Tetryl		0.0196	0.0392	0.0588	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1961	0.2028	103	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1961	0.2132	109	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-IS03-3-5-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012060-07File ID: 112V1201.DSampled: 12/04/10 13:30Prepared: 12/16/10 14:50Analyzed: 12/22/10 23:09Solids: EXT EXPL SDilution: 1Batch: 0L14011Sequence: 0L36306Calibration: 0362005Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0198	0.0396	0.0594	U
99-65-0	1,3-Dinitrobenzene		0.0198	0.0396	0.0594	U
118-96-7	2,4,6-Trinitrotoluene		0.0198	0.0396	0.0594	UX
121-14-2	2,4-Dinitrotoluene		0.0198	0.0396	0.0594	UX, Ø
606-20-2	2,6-Dinitrotoluene		0.0198	0.0396	0.0594	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0198	0.0396	0.0594	UX
88-72-2	2-Nitrotoluene		0.0198	0.0396	0.0594	U
99-08-1	3-Nitrotoluene		0.0198	0.0396	0.0594	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0198	0.0396	0.0594	UX, Ø
99-99-0	4-Nitrotoluene		0.0198	0.0396	0.0594	U
2691-41-0	HMX		0.0198	0.0396	0.0594	U
98-95-3	Nitrobenzene		0.0198	0.0396	0.0594	UX
55-63-0	Nitroglycerin		0.0990	0.198	0.297	U
78-11-5	PETN		0.0990	0.198	0.297	U
121-82-4	RDX		0.0198	0.0396	0.0594	U
479-45-8	Tetryl	0.0264	0.0198	0.0396	0.0594	J
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1980	0.1974	99.7	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1980	0.2284	115	55 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-IS02-4-6-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012060-08File ID: 113V1301.DSampled: 12/04/10 13:50Prepared: 12/16/10 14:50Analyzed: 12/22/10 23:41

Solids:

Preparation: EXT EXPL SDilution: 1Batch: 0L14011Sequence: 0L36306Calibration: 0362005Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0192	0.0385	0.0577	U
99-65-0	1,3-Dinitrobenzene		0.0192	0.0385	0.0577	U
118-96-7	2,4,6-Trinitrotoluene		0.0192	0.0385	0.0577	UX
121-14-2	2,4-Dinitrotoluene		0.0192	0.0385	0.0577	UXO
606-20-2	2,6-Dinitrotoluene	0.0266	0.0192	0.0385	0.0577	J
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0192	0.0385	0.0577	UX
88-72-2	2-Nitrotoluene		0.0192	0.0385	0.0577	U
99-08-1	3-Nitrotoluene		0.0192	0.0385	0.0577	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0192	0.0385	0.0577	UXO
99-99-0	4-Nitrotoluene		0.0192	0.0385	0.0577	U
2691-41-0	HMX		0.0192	0.0385	0.0577	U
98-95-3	Nitrobenzene		0.0192	0.0385	0.0577	UX
55-63-0	Nitroglycerin		0.0962	0.192	0.288	U
78-11-5	PETN		0.0962	0.192	0.288	U
121-82-4	RDX		0.0192	0.0385	0.0577	U
479-45-8	Tetryl	0.0285	0.0192	0.0385	0.0577	J
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1923	0.1916	99.6	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1923	0.2271	118	55 - 140	

* Values outside of QC limits

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ANALYSIS DATA SHEET

MR17-IS01-2-4-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: SoilLaboratory ID: 1012060-09File ID: 114V1401.DSampled: 12/04/10 14:10Prepared: 12/16/10 14:50Analyzed: 12/23/10 00:14

Solids:

Preparation: EXT EXPL SDilution: 1Batch: 0L14011Sequence: 0L36306Calibration: 0362005Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (mg/Kg)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0196	0.0392	0.0588	U
99-65-0	1,3-Dinitrobenzene		0.0196	0.0392	0.0588	U
118-96-7	2,4,6-Trinitrotoluene		0.0196	0.0392	0.0588	UX
121-14-2	2,4-Dinitrotoluene		0.0196	0.0392	0.0588	UX
606-20-2	2,6-Dinitrotoluene		0.0196	0.0392	0.0588	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0196	0.0392	0.0588	UX
88-72-2	2-Nitrotoluene		0.0196	0.0392	0.0588	U
99-08-1	3-Nitrotoluene		0.0196	0.0392	0.0588	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0196	0.0392	0.0588	UX
99-99-0	4-Nitrotoluene		0.0196	0.0392	0.0588	U
2691-41-0	HMX		0.0196	0.0392	0.0588	U
98-95-3	Nitrobenzene		0.0196	0.0392	0.0588	UX
55-63-0	Nitroglycerin		0.0980	0.196	0.294	U
78-11-5	PETN		0.0980	0.196	0.294	U
121-82-4	RDX		0.0196	0.0392	0.0588	U
479-45-8	Tetryl		0.0196	0.0392	0.0588	U
SYSTEM MONITORING COMPOUND		ADDED (mg/Kg)	CONC (mg/Kg)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		0.1961	0.2024	103	55 - 140	
1-Chloro-3-nitrobenzene [2C]		0.1961	0.2225	113	55 - 140	

* Values outside of QC limits

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ANALYSIS DATA SHEET

MR17-EB120410-IS

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: WaterLaboratory ID: 1012060-10File ID: 108V0801.DSampled: 12/04/10 16:30Prepared: 12/08/10 08:06Analyzed: 12/09/10 16:06Solids: Preparation: EXT_EXPL_WDilution: 1Batch: 0L07021Sequence: 0L34905Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0755	0.151	0.302	U
99-65-0	1,3-Dinitrobenzene		0.0755	0.151	0.302	U
118-96-7	2,4,6-Trinitrotoluene		0.0755	0.151	0.302	U
121-14-2	2,4-Dinitrotoluene		0.0755	0.151	0.302	U
606-20-2	2,6-Dinitrotoluene		0.0755	0.151	0.302	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0755	0.151	0.302	U
88-72-2	2-Nitrotoluene		0.0755	0.151	0.302	U
99-08-1	3-Nitrotoluene		0.0755	0.151	0.302	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0755	0.151	0.302	U
99-99-0	4-Nitrotoluene		0.0755	0.151	0.302	U
2691-41-0	HMX		0.0755	0.151	0.302	U
98-95-3	Nitrobenzene		0.0755	0.151	0.302	U
55-63-0	Nitroglycerin		0.189	0.377	0.755	U
78-11-5	PETN		0.189	0.377	0.755	U
121-82-4	RDX	0.192	0.0755	0.151	0.302	J
479-45-8	Tetryl		0.0755	0.151	0.302	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		1.887	1.781	94.4	40 - 145	
1-Chloro-3-nitrobenzene [2C]		1.887	1.685	89.3	40 - 145	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-MW09-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: Ground WaterLaboratory ID: 1012060-11File ID: 109V0901.DSampled: 12/05/10 12:45Prepared: 12/08/10 08:06Analyzed: 12/09/10 16:39

Solids:

Preparation: EXT EXPL WDilution: 1Batch: 0L07021Sequence: 0L34905Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0748	0.150	0.299	U
99-65-0	1,3-Dinitrobenzene		0.0748	0.150	0.299	U
118-96-7	2,4,6-Trinitrotoluene		0.0748	0.150	0.299	U
121-14-2	2,4-Dinitrotoluene		0.0748	0.150	0.299	U
606-20-2	2,6-Dinitrotoluene		0.0748	0.150	0.299	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0748	0.150	0.299	U
88-72-2	2-Nitrotoluene		0.0748	0.150	0.299	U
99-08-1	3-Nitrotoluene		0.0748	0.150	0.299	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0748	0.150	0.299	U
99-99-0	4-Nitrotoluene		0.0748	0.150	0.299	U
2691-41-0	HMX		0.0748	0.150	0.299	U
98-95-3	Nitrobenzene		0.0748	0.150	0.299	U
55-63-0	Nitroglycerin		0.187	0.374	0.748	UN. O
78-11-5	PETN		0.187	0.374	0.748	U
121-82-4	RDX	0.0955	0.0748	0.150	0.299	JP
479-45-8	Tetryl		0.0748	0.150	0.299	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		1.869	1.994	107	40 - 145	
1-Chloro-3-nitrobenzene [2C]		1.869	1.872	100	40 - 145	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-MW15-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012060
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Ground Water Laboratory ID: 1012060-13 File ID: 112V1201.D
 Sampled: 12/05/10 14:00 Prepared: 12/08/10 08:06 Analyzed: 12/09/10 18:16
 Solids: Preparation: EXT EXPL W Dilution: 1
 Batch: 0L07021 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0800	0.160	0.320	U
99-65-0	1,3-Dinitrobenzene		0.0800	0.160	0.320	U
118-96-7	2,4,6-Trinitrotoluene		0.0800	0.160	0.320	U
121-14-2	2,4-Dinitrotoluene		0.0800	0.160	0.320	U
606-20-2	2,6-Dinitrotoluene		0.0800	0.160	0.320	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0800	0.160	0.320	U
88-72-2	2-Nitrotoluene		0.0800	0.160	0.320	U
99-08-1	3-Nitrotoluene [2C]	0.420	0.0800	0.160	0.320	PM U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0800	0.160	0.320	U
99-99-0	4-Nitrotoluene		0.0800	0.160	0.320	U
2691-41-0	HMX		0.0800	0.160	0.320	U
98-95-3	Nitrobenzene		0.0800	0.160	0.320	U
55-63-0	Nitroglycerin		0.200	0.400	0.800	U
78-11-5	PETN		0.200	0.400	0.800	U
121-82-4	RDX		0.0800	0.160	0.320	U
479-45-8	Tetryl		0.0800	0.160	0.320	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		2.000	2.314	116	40 - 145	
1-Chloro-3-nitrobenzene [2C]		2.000	1.960	98.0	40 - 145	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-MW15D-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012060
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Ground Water Laboratory ID: 1012060-14 File ID: 113V1301.D
 Sampled: 12/05/10 14:05 Prepared: 12/08/10 08:06 Analyzed: 12/09/10 18:48
 Solids: Preparation: EXT EXPL W Dilution: 1
 Batch: 0L07021 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0784	0.157	0.314	U
99-65-0	1,3-Dinitrobenzene		0.0784	0.157	0.314	U
118-96-7	2,4,6-Trinitrotoluene		0.0784	0.157	0.314	U
121-14-2	2,4-Dinitrotoluene		0.0784	0.157	0.314	U
606-20-2	2,6-Dinitrotoluene		0.0784	0.157	0.314	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0784	0.157	0.314	U
88-72-2	2-Nitrotoluene		0.0784	0.157	0.314	U
99-08-1	3-Nitrotoluene [2C]	0.282	0.0784	0.157	0.314	JPM U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0784	0.157	0.314	U
99-99-0	4-Nitrotoluene		0.0784	0.157	0.314	U
2691-41-0	HMX		0.0784	0.157	0.314	U
98-95-3	Nitrobenzene		0.0784	0.157	0.314	U
55-63-0	Nitroglycerin		0.196	0.392	0.784	U
78-11-5	PETN		0.196	0.392	0.784	U
121-82-4	RDX		0.0784	0.157	0.314	U
479-45-8	Tetryl		0.0784	0.157	0.314	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		1.961	2.199	112	40 - 145	
1-Chloro-3-nitrobenzene [2C]		1.961	1.868	95.3	40 - 145	

* Values outside of QC limits

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ANALYSIS DATA SHEET

MR17-EB120510-MW

Laboratory: Empirical Laboratories, LLC

SDG: 1012060

Client: CH2M Hill, Inc.

Project: Lejeune CTO-141 UXO-17

Matrix: Water

Laboratory ID: 1012060-15

File ID: 114V1401.D

Sampled: 12/05/10 15:00

Prepared: 12/08/10 08:06

Analyzed: 12/09/10 19:20

Solids: EXT EXPL W

Dilution: 1

Batch: 0L07021

Sequence: 0L34905

Calibration: 0237002

Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0784	0.157	0.314	U
99-65-0	1,3-Dinitrobenzene		0.0784	0.157	0.314	U
118-96-7	2,4,6-Trinitrotoluene		0.0784	0.157	0.314	U
121-14-2	2,4-Dinitrotoluene		0.0784	0.157	0.314	U
606-20-2	2,6-Dinitrotoluene		0.0784	0.157	0.314	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0784	0.157	0.314	U
88-72-2	2-Nitrotoluene		0.0784	0.157	0.314	U
99-08-1	3-Nitrotoluene		0.0784	0.157	0.314	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0784	0.157	0.314	U
99-99-0	4-Nitrotoluene		0.0784	0.157	0.314	U
2691-41-0	HMX		0.0784	0.157	0.314	U
98-95-3	Nitrobenzene		0.0784	0.157	0.314	U
55-63-0	Nitroglycerin		0.196	0.392	0.784	U
78-11-5	PETN		0.196	0.392	0.784	U
121-82-4	RDX	0.158	0.0784	0.157	0.314	J
479-45-8	Tetryl		0.0784	0.157	0.314	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		1.961	2.011	103	40 - 145	
1-Chloro-3-nitrobenzene [2C]		1.961	1.853	94.5	40 - 145	

* Values outside of QC limits

Summ
2/2/10

ANALYSIS DATA SHEET

MR17-MW14-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: Ground WaterLaboratory ID: 1012060-16File ID: 115V1501.DSampled: 12/06/10 08:10Prepared: 12/08/10 08:06Analyzed: 12/09/10 19:52Solids: Preparation: EXT EXPL WDilution: 1Batch: 0L07021Sequence: 0L34905Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0800	0.160	0.320	U
99-65-0	1,3-Dinitrobenzene		0.0800	0.160	0.320	U
118-96-7	2,4,6-Trinitrotoluene		0.0800	0.160	0.320	U
121-14-2	2,4-Dinitrotoluene		0.0800	0.160	0.320	U
606-20-2	2,6-Dinitrotoluene		0.0800	0.160	0.320	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0800	0.160	0.320	U
88-72-2	2-Nitrotoluene		0.0800	0.160	0.320	U
99-08-1	3-Nitrotoluene		0.0800	0.160	0.320	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0800	0.160	0.320	U
99-99-0	4-Nitrotoluene		0.0800	0.160	0.320	U
2691-41-0	HMX		0.0800	0.160	0.320	U
98-95-3	Nitrobenzene		0.0800	0.160	0.320	U
55-63-0	Nitroglycerin		0.200	0.400	0.800	U
78-11-5	PETN		0.200	0.400	0.800	U
121-82-4	RDX		0.0800	0.160	0.320	U
479-45-8	Tetryl		0.0800	0.160	0.320	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		2.000	2.228	111	40 - 145	
1-Chloro-3-nitrobenzene [2C]		2.000	1.981	99.1	40 - 145	

* Values outside of QC limits

ANALYSIS DATA SHEET

MR17-MW13-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012060
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Ground Water Laboratory ID: 1012060-17 File ID: 117V1701.D
 Sampled: 12/06/10 09:20 Prepared: 12/08/10 08:06 Analyzed: 12/09/10 20:57
 Solids: Preparation: EXT EXPL W Dilution: 1
 Batch: 0L07021 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0842	0.168	0.337	U
99-65-0	1,3-Dinitrobenzene		0.0842	0.168	0.337	U
118-96-7	2,4,6-Trinitrotoluene		0.0842	0.168	0.337	U
121-14-2	2,4-Dinitrotoluene		0.0842	0.168	0.337	U
606-20-2	2,6-Dinitrotoluene		0.0842	0.168	0.337	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0842	0.168	0.337	U
88-72-2	2-Nitrotoluene		0.0842	0.168	0.337	U
99-08-1	3-Nitrotoluene		0.0842	0.168	0.337	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0842	0.168	0.337	U
99-99-0	4-Nitrotoluene		0.0842	0.168	0.337	U
2691-41-0	HMX		0.0842	0.168	0.337	U
98-95-3	Nitrobenzene		0.0842	0.168	0.337	U
55-63-0	Nitroglycerin		0.211	0.421	0.842	U
78-11-5	PETN		0.211	0.421	0.842	U
121-82-4	RDX	0.115	0.0842	0.168	0.337	J
479-45-8	Tetryl		0.0842	0.168	0.337	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		2.105	2.226	106	40 - 145	
1-Chloro-3-nitrobenzene [2C]		2.105	2.185	104	40 - 145	

* Values outside of QC limits

ANALYSIS DATA SHEET

MW17-MW10-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: Ground WaterLaboratory ID: 1012060-18File ID: 118V1801.DSampled: 12/06/10 11:20Prepared: 12/08/10 08:06Analyzed: 12/09/10 21:29Solids: Preparation: EXT EXPL WDilution: 1Batch: 0L07021Sequence: 0L34905Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0769	0.154	0.308	U
99-65-0	1,3-Dinitrobenzene		0.0769	0.154	0.308	U
118-96-7	2,4,6-Trinitrotoluene		0.0769	0.154	0.308	U
121-14-2	2,4-Dinitrotoluene	0.111	0.0769	0.154	0.308	J
606-20-2	2,6-Dinitrotoluene		0.0769	0.154	0.308	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.154	0.0769	0.154	0.308	JPM 2
88-72-2	2-Nitrotoluene	0.189	0.0769	0.154	0.308	JF
99-08-1	3-Nitrotoluene	0.113	0.0769	0.154	0.308	J
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0769	0.154	0.308	U
99-99-0	4-Nitrotoluene		0.0769	0.154	0.308	U
2691-41-0	HMX [2C]	0.154	0.0769	0.154	0.308	JPM 2
98-95-3	Nitrobenzene		0.0769	0.154	0.308	U
55-63-0	Nitroglycerin	1.15	0.192	0.385	0.769	PM 2
78-11-5	PETN		0.192	0.385	0.769	U
121-82-4	RDX		0.0769	0.154	0.308	U
479-45-8	Tetryl	0.289	0.0769	0.154	0.308	J
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		1.923	2.166	113	40 - 145	
1-Chloro-3-nitrobenzene [2C]		1.923	2.041	106	40 - 145	

* Values outside of QC limits

SML
2/21/2011

ANALYSIS DATA SHEET

MW17-MW11-10D

Laboratory: Empirical Laboratories, LLCSDG: 1012060Client: CH2M Hill, Inc.Project: Lejeune CTO-141 UXO-17Matrix: Ground WaterLaboratory ID: 1012060-19File ID: 119V1901.DSampled: 12/06/10 12:25Prepared: 12/08/10 08:06Analyzed: 12/09/10 22:02Solids: Preparation: EXT_EXPL_WDilution: 1Batch: 0L07021Sequence: 0L34905Calibration: 0237002Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0800	0.160	0.320	U
99-65-0	1,3-Dinitrobenzene		0.0800	0.160	0.320	U
118-96-7	2,4,6-Trinitrotoluene		0.0800	0.160	0.320	U
121-14-2	2,4-Dinitrotoluene		0.0800	0.160	0.320	U
606-20-2	2,6-Dinitrotoluene		0.0800	0.160	0.320	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0800	0.160	0.320	U
88-72-2	2-Nitrotoluene		0.0800	0.160	0.320	U
99-08-1	3-Nitrotoluene		0.0800	0.160	0.320	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0800	0.160	0.320	U
99-99-0	4-Nitrotoluene		0.0800	0.160	0.320	U
2691-41-0	HMX		0.0800	0.160	0.320	U
98-95-3	Nitrobenzene		0.0800	0.160	0.320	U
55-63-0	Nitroglycerin		0.200	0.400	0.800	U Ø
78-11-5	PETN		0.200	0.400	0.800	U
121-82-4	RDX		0.0800	0.160	0.320	U
479-45-8	Tetryl		0.0800	0.160	0.320	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		2.000	2.232	112	40 - 145	
1-Chloro-3-nitrobenzene [2C]		2.000	2.120	106	40 - 145	

* Values outside of QC limits

ANALYSIS DATA SHEET

MW17-MW12-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012060
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Ground Water Laboratory ID: 1012060-20 File ID: 120V2001.D
 Sampled: 12/06/10 13:25 Prepared: 12/08/10 08:06 Analyzed: 12/09/10 22:34
 Solids: Preparation: EXT_EXPL_W Dilution: 1
 Batch: 0L07021 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0842	0.168	0.337	U
99-65-0	1,3-Dinitrobenzene		0.0842	0.168	0.337	U
118-96-7	2,4,6-Trinitrotoluene		0.0842	0.168	0.337	U
121-14-2	2,4-Dinitrotoluene		0.0842	0.168	0.337	U
606-20-2	2,6-Dinitrotoluene		0.0842	0.168	0.337	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0842	0.168	0.337	U
88-72-2	2-Nitrotoluene		0.0842	0.168	0.337	U
99-08-1	3-Nitrotoluene		0.0842	0.168	0.337	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0842	0.168	0.337	U
99-99-0	4-Nitrotoluene		0.0842	0.168	0.337	U
2691-41-0	HMX		0.0842	0.168	0.337	U
98-95-3	Nitrobenzene		0.0842	0.168	0.337	U
55-63-0	Nitroglycerin		0.211	0.421	0.842	U
78-11-5	PETN		0.211	0.421	0.842	U
121-82-4	RDX		0.0842	0.168	0.337	U
479-45-8	Tetryl		0.0842	0.168	0.337	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		2.105	2.163	103	40 - 145	

* Values outside of QC limits

ANALYSIS DATA SHEET

MW17-EB120610-MW

Laboratory: Empirical Laboratories, LLC SDG: 1012060
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Water Laboratory ID: 1012060-21 File ID: 121V2101.D
 Sampled: 12/06/10 13:45 Prepared: 12/08/10 08:06 Analyzed: 12/09/10 23:06
 Solids: Preparation: EXT_EXPL W Dilution: 1
 Batch: 0L07021 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0889	0.178	0.356	U
99-65-0	1,3-Dinitrobenzene		0.0889	0.178	0.356	U
118-96-7	2,4,6-Trinitrotoluene		0.0889	0.178	0.356	U
121-14-2	2,4-Dinitrotoluene		0.0889	0.178	0.356	U
606-20-2	2,6-Dinitrotoluene		0.0889	0.178	0.356	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0889	0.178	0.356	U
88-72-2	2-Nitrotoluene		0.0889	0.178	0.356	U
99-08-1	3-Nitrotoluene		0.0889	0.178	0.356	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0889	0.178	0.356	U
99-99-0	4-Nitrotoluene		0.0889	0.178	0.356	U
2691-41-0	HMX		0.0889	0.178	0.356	U
98-95-3	Nitrobenzene	<i>0.178</i>	0.111	0.0889	0.178	0.356
55-63-0	Nitroglycerin		0.222	0.444	0.889	U
78-11-5	PETN		0.222	0.444	0.889	U
121-82-4	RDX	0.394	0.0889	0.178	0.356	U
479-45-8	Tetryl		0.0889	0.178	0.356	U
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		2.222	2.620	118	40 - 145	
1-Chloro-3-nitrobenzene [2C]		2.222	2.227	100	40 - 145	

* Values outside of QC limits

ANALYSIS DATA SHEET

MW17-FB120610-10D

Laboratory: Empirical Laboratories, LLC SDG: 1012060
 Client: CH2M Hill, Inc. Project: Lejeune CTO-141 UXO-17
 Matrix: Water Laboratory ID: 1012060-22 File ID: 122V2201.D
 Sampled: 12/06/10 14:00 Prepared: 12/08/10 08:06 Analyzed: 12/09/10 23:39
 Solids: Preparation: EXT EXPL W Dilution: 1
 Batch: 0L07021 Sequence: 0L34905 Calibration: 0237002 Instrument: GL-HPLC1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0748	0.150	0.299	U
99-65-0	1,3-Dinitrobenzene		0.0748	0.150	0.299	U
118-96-7	2,4,6-Trinitrotoluene		0.0748	0.150	0.299	U
121-14-2	2,4-Dinitrotoluene		0.0748	0.150	0.299	U
606-20-2	2,6-Dinitrotoluene		0.0748	0.150	0.299	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0748	0.150	0.299	U
88-72-2	2-Nitrotoluene		0.0748	0.150	0.299	U
99-08-1	3-Nitrotoluene		0.0748	0.150	0.299	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0748	0.150	0.299	U
99-99-0	4-Nitrotoluene		0.0748	0.150	0.299	U
2691-41-0	HMX		0.0748	0.150	0.299	U
98-95-3	Nitrobenzene	<i>0.150</i>	<i>0.126</i>	0.150	0.299	<i>JPM U</i>
55-63-0	Nitroglycerin	0.522	0.187	0.374	0.748	<i>JPM, 2C</i>
78-11-5	PETN		0.187	0.374	0.748	U
121-82-4	RDX	0.286	0.0748	0.150	0.299	<i>JPM</i>
479-45-8	Tetryl		0.0748	0.150	0.299	<i>2C</i>
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene		1.869	2.148	115	40 - 145	
1-Chloro-3-nitrobenzene [2C]		1.869	1.818	97.3	40 - 145	

* Values outside of QC limits

Appendix J
Human Health Risk Screening Tables

Table 2.1

Step 1 Screening, OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

UXO-17

MCB Camp Lejeune, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Surface Soil	121-14-2	2,4-Dinitrotoluene	1.3E-01 J	5.2E-01 J	MG/KG	MR17-SS17-10D	2/37	0.0577 - 1.2	5.2E-01	N/A	1.6E+00 C*	N/A		NO	BSL
	606-20-2	2,6-Dinitrotoluene	2.5E-02 J	3.3E-02 J	MG/KG	MR17-SS08D-10D	2/37	0.0577 - 1.2	3.3E-02	N/A	6.1E+00 N	N/A		NO	BSL
	98-95-3	Nitrobenzene	8.9E-02	4.3E+00 N	MG/KG	MR17-SS14-10D	2/37	0.0577 - 0.62	4.3E+00	N/A	4.8E+00 C*	N/A		NO	BSL
	99-35-4	1,3,5-Trinitrobenzene	2.8E-02 J	2.8E-02 J	MG/KG	MR17-SS13-10D	1/37	0.0577 - 0.62	2.8E-02	N/A	2.2E+02 N	N/A		NO	BSL
	99-65-0	1,3-Dinitrobenzene	2.9E-02 J	3.8E-02 J	MG/KG	MR17-SS10-10D	3/37	0.0577 - 0.62	3.8E-02	N/A	6.1E-01 N	N/A		NO	BSL
	118-96-7	2,4,6-Trinitrotoluene	3.6E-02 J	2.2E-01 N	MG/KG	MR17-SS08-10D	3/37	0.0577 - 0.62	2.2E-01	N/A	3.6E+00 C**	N/A		NO	BSL
	35572-78-2	2-Amino-4,6-dinitrotoluene	7.6E-02 N	7.6E-02 N	MG/KG	MR17-SS16-10D	1/37	0.0577 - 1.2	7.6E-02	N/A	1.5E+01 N	N/A		NO	BSL
	88-72-2	2-Nitrotoluene	6.7E-02 J	1.3E-01 N	MG/KG	MR17-SS11D-10D	2/37	0.0577 - 1.2	1.3E-01	N/A	2.9E+00 C*	N/A		NO	BSL
	99-08-1	3-Nitrotoluene	2.4E-02 J	2.4E-02 J	MG/KG	MR17-SS06-10D	1/37	0.0577 - 1.2	2.4E-02	N/A	6.1E-01 N	N/A		NO	BSL
	19406-51-0	4-Amino-2,6-dinitrotoluene	ND	ND	MG/KG		0/37	0.0392 - 1.2	1.2E+00	N/A	1.5E+01 N	N/A		NO	DLBSL
	99-99-0	4-Nitrotoluene	7.0E-02 J	1.3E-01 J	MG/KG	MR17-SS13-10D	2/37	0.0577 - 1.2	1.3E-01	N/A	2.4E+01 C**	N/A		NO	BSL
	2691-41-0	HMX	ND	ND	MG/KG		0/37	0.0392 - 1.2	1.2E+00	N/A	3.8E+02 N	N/A		NO	DLBSL
	55-63-0	Nitroglycerin	2.0E-01 J	2.6E-01 J	MG/KG	MR17-SS11-10D	3/28	0.288 - 0.3	2.6E-01	N/A	6.1E-01 N	N/A		NO	BSL
	14797-73-0	Perchlorate	1.2E-03 J	8.1E-03	MG/KG	MR17-DU03-SS01-10D	2/37	0.0021 - 0.00654	8.1E-03	N/A	5.5E+00 N	N/A		NO	BSL
	78-11-5	PETN	1.1E-01 J	1.1E+00	MG/KG	MR17-SS14-10D	3/28	0.288 - 0.3	1.1E+00	N/A	1.2E+01 C**	N/A		NO	BSL
	121-82-4	RDX	5.7E-02 J	3.7E-01 J	MG/KG	MR17-DU03-SS03-10D	4/37	0.0577 - 0.62	3.7E-01	N/A	5.6E+00 C*	N/A		NO	BSL
	479-45-8	Tetryl	ND	ND	MG/KG		0/28	0.0385 - 1.2	1.2E+00	N/A	2.4E+01 N	N/A		NO	DLBSL
	7429-90-5	Aluminum	1.2E+02	6.9E+03	MG/KG	MR17-DU02D-SS03-10D	28/28	10.5 - 256	6.9E+03	5.5E+03	7.7E+03 N	N/A		NO	BSL
	7440-36-0	Antimony	ND	ND	MG/KG		0/17	0.397 - 10.3	1.0E+01	4.5E-01	3.1E+00 N	N/A		YES	DLASL
	7440-38-2	Arsenic	1.9E-01 J	1.9E+00	MG/KG	MR17-SS07-10D	23/37	0.496 - 12.8	1.9E+00	6.3E-01	3.9E-01 C*	5.8E+00	NCSSL	YES	ASL
	7440-39-3	Barium	7.5E-01 J	1.7E+01	MG/KG	MR17-SS17-10D	36/37	1.99 - 51.3	1.7E+01	1.5E+01	1.5E+03 N	5.8E+02	NCSSL	NO	BSL
	7440-41-7	Beryllium	5.6E-02 J	2.0E-01 J	MG/KG	MR17-SS07-10D	13/28	0.248 - 6.41	2.0E-01	1.0E-01	1.6E+01 N	N/A		NO	BSL
	7440-43-9	Cadmium	8.7E-02 J	1.5E+00 J	MG/KG	MR17-DU01-SS03-10D	14/37	0.248 - 6.41	1.5E+00	3.3E-02	7.0E+00 N	3.0E+00	NCSSL	NO	BSL
	7440-70-2	Calcium	1.1E+02 J+	1.6E+05	MG/KG	MR17-DU01-SS03-10D	28/28	262 - 6410	1.6E+05	6.4E+03	N/A	N/A		NO	NUT
	7440-47-3	Chromium	4.1E-01 J	8.7E+00	MG/KG	MR17-SS07-10D	37/37	0.496 - 12.8	8.7E+00	6.1E+00	2.9E-01 C	3.8E+00	NCSSL	YES	ASL
	7440-48-4	Cobalt	3.7E-01 J	2.4E+00	MG/KG	MR17-DU01-SS01-10D	7/28	0.62 - 16	2.4E+00	2.9E-01	2.3E+00 N	N/A		YES	ASL
	7440-50-8	Copper	4.0E-01 J	4.7E+00	MG/KG	MR17-SS07-10D	26/28	0.496 - 12.8	4.7E+00	4.8E+00	3.1E+02 N	7.0E+02	NCSSL	NO	BSL
	7439-89-6	Iron	7.9E+01	3.8E+03	MG/KG	MR17-SS12-10D	28/28	4.96 - 128	3.8E+03	3.2E+03	5.5E+03 N	1.5E+02	NCSSL	NO	BSL
	7439-92-1	Lead	2.1E+00	1.4E+01	MG/KG	MR17-SS07-10D	36/37	0.157 - 3.84	1.4E+01	1.2E+01	4.0E+02 N	2.7E+02	NCSSL	NO	BSL
	7439-95-4	Magnesium	6.3E+01 J+	2.2E+03 J	MG/KG	MR17-DU01-SS03-10D	24/28	248 - 6410	2.2E+03	2.4E+02	N/A	N/A		NO	NUT
	7439-96-5	Manganese	1.9E+00	1.9E+02	MG/KG	MR17-DU01-SS03-10D	28/28	0.745 - 19.2	1.9E+02	1.4E+01	1.8E+02 N	6.5E+01	NCSSL	YES	ASL
	7439-97-6	Mercury	1.4E-02 J	3.8E-02	MG/KG	MR17-SS07-10D	25/37	0.033 - 0.0421	3.8E-02	8.1E-02	2.3E+00 N	1.0E+00	NCSSL	NO	BSL
	7440-02-0	Nickel	2.2E-01 J	1.6E+01	MG/KG	MR17-DU01-SS03-10D	25/28	0.496 - 12.8	1.6E+01	1.2E+00	1.5E+02 N	1.3E+02	NCSSL	NO	BSL

Table 2.1

Step 1 Screening, OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

UXO-17

MCB Camp Lejeune, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	7440-09-7	Potassium	7.2E+01 J+	4.6E+02	MG/KG	MR17-DU01-SS03-10D	24/28	248 - 330	4.6E+02	1.2E+02	N/A	N/A		NO	NUT
	7782-49-2	Selenium	1.8E-01 J	1.2E+00	MG/KG	MR17-SS07-10D	21/37	0.496 - 12.8	1.2E+00	5.6E-01	3.9E+01 N	2.1E+00	NCSSL	NO	BSL
	7440-22-4	Silver	ND	ND	MG/KG		0/37	0.099 - 2.56	2.6E+00	1.4E-01	3.9E+01 N	3.4E+00	NCSSL	NO	DLBSL
	7440-23-5	Sodium	6.0E+01 J	6.2E+01 J	MG/KG	MR17-DU01-SS01-10D	2/28	248 - 6410	6.2E+01	8.1E+01	N/A	N/A		NO	NUT
	7440-28-0	Thallium	ND	ND	MG/KG		0/28	0.199 - 5.13	5.1E+00	3.6E-01	7.8E-02 N	N/A		YES	DLASL
	7440-62-2	Vanadium	7.4E-01	1.2E+01	MG/KG	MR17-SS07-10D	27/28	0.62 - 16	1.2E+01	8.9E+00	3.9E+01 N	N/A		NO	BSL
	7440-66-6	Zinc	6.1E-01 J	3.5E+01	MG/KG	MR17-SS07-10D	28/28	1.05 - 25.6	3.5E+01	1.1E+01	2.3E+03 N	1.2E+03	NCSSL	NO	BSL

[1] Minimum/Maximum detected concentrations.

[2] Maximum concentration is used for screening. If chemical was not detected, the maximum detection limit is used for screening.

[3] Background values are two times the arithmetic mean basewide background surface soil concentrations.

Background values are from *Final Base Background Soil Study Report, Marine Corps Base Camp Lejeune, North Carolina*, Baker Environmental, April 25, 2001.

[4] Oak Ridge National Laboratory (ORNL). June, 2011. Regional Screening Levels for Chemical Contaminants at Superfund Sites.

http://www.epa.gov/reg3hwm/risk/human/rb-concentration_table/index.htm. Residential soil RSLs. RSLs based on noncarcinogenic effects divided by 10

to account for exposure to more than one constituent that affects the same target organ.

RSL value for chromium(VI) used as surrogate for chromium.

The soil value of 400 mg/kg for lead is from the Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action

Facilities, USEPA, July 14, 1994.

[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)
Detection Limit Above Screening Level (DLASL), not quantitatively evaluated in HHRA

Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)
Detection Limit Below Screening Level (DLBSL)
Below Background Value (BBK)

Definitions:

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/
To Be Considered

COPC = Chemical of Potential Concern

N/A = Not available

NCSSL = North Carolina Soil Screening Levels (NCDENR, 2010)

Data Qualifiers:

J = Estimated Value

J+ = Value may be biased high, actual value may be lower

N = Tentative Identification, considered present

Screening Toxicity:

C = Carcinogenic

C* = N screening level < 100x C screening level, C screening value
used as screening level

C** = N screening level < 10x C screening level, therefore

N screening value/10 used as screening level

N = Noncarcinogenic

Table 2.1a

Step 2 Screening, Risk Ratio Screening for Surface Soil, Maximum Detected Concentration

UXO-17

MCB Camp Lejeune, North Carolina

Analyte	Detection Frequency	Maximum Detected Concentration (Qualifier)	Sample Location of Maximum Detected Concentration	Residential Soil RSL	Acceptable Risk Level	Corresponding Hazard Index ^a	Corresponding Cancer Risk ^b	Target Organ
Metals (mg/kg)								
Arsenic	23 / 37	1.9E+00	MR17-SS07-10D	3.9E-01	1E-06	NA	5E-06	NA
Chromium	37 / 37	8.7E+00	MR17-SS07-10D	2.9E-01	1E-06	NA	3E-05	NA
Cobalt	7 / 28	2.4E+00	MR17-DU01-SS01-10D	2.3E+01	1	0.1	NA	Thyroid
Manganese	28 / 28	1.9E+02	MR17-DU01-SS03-10D	1.8E+03	1	0.1	NA	Central Nervous System
Cumulative Corresponding Hazard Index^c						0.2		
Cumulative Corresponding Cancer Risk^d							4E-05	
Total Central Nervous System HI =							0.1	
Total Thyroid HI =							0.1	

Notes:^a Corresponding Hazard Index equals maximum detected concentration divided by the RSL divided by the acceptable risk level.^b Corresponding Cancer Risk equals maximum detected concentration divided by the RSL divided by the acceptable risk level.^c Cumulative Corresponding Hazard Index equals sum of Corresponding Hazard Indices for each constituent.^d Cumulative Corresponding Cancer Risk equals sum of Corresponding Cancer Risks for each constituent.

Constituent selected as COPC if it contributes to an overall Hazard Index by target organ greater than 0.5 or Cumulative Corresponding Cancer Risk greater than 5E-05, otherwise, constituent not selected as COPC.

Constituents selected as COPCs are indicated by shading.

COPC = Constituent of Potential Concern

mg/kg = milligrams per kilogram

NA = Not available/not applicable.

Table 2.2

Step 1 Screening, OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

UXO-17

MCB Camp Lejeune, North Carolina

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Subsurface Soil	121-14-2	2,4-Dinitrotoluene	ND	ND	MG/KG	MR17-IS02-4-6-10D	0/19	0.0385 - 1.2	1.2E+00	N/A	1.6E+00 C*	N/A		NO	DLBSL
	606-20-2	2,6-Dinitrotoluene	2.7E-02 J	2.7E-02 J	MG/KG		1/19	0.0577 - 1.2	2.7E-02	N/A	6.1E+00 N	N/A		NO	BSL
	98-95-3	Nitrobenzene	ND	ND	MG/KG		0/19	0.0385 - 0.62	6.2E-01	N/A	4.8E+00 C*	N/A		NO	DLBSL
	99-35-4	1,3,5-Trinitrobenzene	ND	ND	MG/KG		0/19	0.0385 - 0.62	6.2E-01	N/A	2.2E+02 N	N/A		NO	DLBSL
	99-65-0	1,3-Dinitrobenzene	ND	ND	MG/KG		0/19	0.0385 - 0.62	6.2E-01	N/A	6.1E-01 N	N/A		YES	DLASL
	118-96-7	2,4,6-Trinitrotoluene	ND	ND	MG/KG		0/19	0.0385 - 0.62	6.2E-01	N/A	3.6E+00 C**	N/A		NO	DLBSL
	35572-78-2	2-Amino-4,6-dinitrotoluene	4.7E-02 J	4.7E-02 J	MG/KG	MR17-IS07-5-7-10D	1/19	0.0385 - 1.2	4.7E-02	N/A	1.5E+01 N	N/A		NO	BSL
	88-72-2	2-Nitrotoluene	ND	ND	MG/KG		0/19	0.0385 - 1.2	1.2E+00	N/A	2.9E+00 C*	N/A		NO	DLBSL
	99-08-1	3-Nitrotoluene	ND	ND	MG/KG		0/19	0.0385 - 1.2	1.2E+00	N/A	6.1E-01 N	N/A		YES	DLASL
	19406-51-0	4-Amino-2,6-dinitrotoluene	3.3E-02 J	3.3E-02 J	MG/KG		1/19	0.0577 - 1.2	3.3E-02	N/A	1.5E+01 N	N/A		NO	BSL
	99-99-0	4-Nitrotoluene	1.0E-01 N	1.0E-01 N	MG/KG		1/19	0.0577 - 1.2	1.0E-01	N/A	2.4E+01 C**	N/A		NO	BSL
	2691-41-0	HMX	ND	ND	MG/KG	MR17-IS07-5-7-10D	0/19	0.0385 - 0.62	6.2E-01	N/A	3.8E+02 N	N/A		NO	DLBSL
	55-63-0	Nitroglycerin	ND	ND	MG/KG		0/15	0.192 - 0.2	2.0E-01	N/A	6.1E-01 N	N/A		NO	DLBSL
	14797-73-0	Perchlorate	ND	ND	MG/KG		0/19	0.0022 - 0.00641	6.4E-03	N/A	5.5E+00 N	N/A		NO	DLBSL
	78-11-5	PETN	ND	ND	MG/KG		0/15	0.192 - 0.2	2.0E-01	N/A	1.2E+01 C**	N/A		NO	DLBSL
	121-82-4	RDX	ND	ND	MG/KG		0/19	0.0385 - 0.62	6.2E-01	N/A	5.6E+00 C*	N/A		NO	DLBSL
	479-45-8	Tetryl	2.6E-02 J	3.4E-02 J	MG/KG	MR17-IS04-3-5-10D	4/15	0.0577 - 0.06	3.4E-02	N/A	2.4E+01 N	N/A		NO	BSL
	7429-90-5	Aluminum	1.4E+03	1.4E+04	MG/KG	MR17-IS14D-6-8-10D	15/15	10.4 - 12.6	1.4E+04	1.0E+04	7.7E+03 N	N/A		YES	ASL
	7440-36-0	Antimony	ND	ND	MG/KG		0/5	0.414 - 0.505	5.1E-01	3.6E-01	3.1E+00 N	N/A		NO	DLBSL
	7440-38-2	Arsenic	2.0E-01 J	3.0E+00	MG/KG		12/19	0.518 - 1.1	3.0E+00	2.1E+00	3.9E-01 C*	5.8E+00	NCSSL	YES	ASL
	7440-39-3	Barium	1.4E+00 J	1.5E+01	MG/KG		19/19	2.07 - 24.7	1.5E+01	1.7E+01	1.5E+03 N	5.8E+02	NCSSL	NO	BSL
	7440-41-7	Beryllium	6.6E-02 J	2.4E-01 J	MG/KG		9/15	0.259 - 0.316	2.4E-01	1.7E-01	1.6E+01 N	N/A		NO	BSL
	7440-43-9	Cadmium	6.4E-02 J	1.3E-01 J	MG/KG	MR17-IS02-4-6-10D	3/19	0.259 - 0.56	1.3E-01	2.3E-02	7.0E+00 N	3.0E+00	NCSSL	NO	BSL
	7440-70-2	Calcium	8.5E+01 J	2.5E+03 J+	MG/KG		8/15	259 - 316	2.5E+03	4.4E+02	N/A	N/A		NO	NUT
	7440-47-3	Chromium	1.5E+00 J+	1.6E+01	MG/KG		19/19	0.518 - 1.2	1.6E+01	1.5E+01	2.9E-01 C	3.8E+00	NCSSL	YES	ASL
	7440-48-4	Cobalt	3.7E-01 J	4.5E-01 J	MG/KG		4/15	0.648 - 0.789	4.5E-01	8.2E-01	2.3E+00 N	N/A		NO	BSL
	7440-50-8	Copper	3.0E-01 J	2.0E+00	MG/KG		15/15	0.518 - 0.631	2.0E+00	2.6E+00	3.1E+02 N	7.0E+02	NCSSL	NO	BSL
	7439-89-6	Iron	2.1E+02	6.6E+03	MG/KG	MR17-IS02-4-6-10D	15/15	5.18 - 6.31	6.6E+03	5.4E+03	5.5E+03 N	1.5E+02	NCSSL	YES	ASL
	7439-92-1	Lead	1.8E+00	6.6E+00	MG/KG		19/19	0.155 - 0.37	6.6E+00	8.5E+00	4.0E+02 N	2.7E+02	NCSSL	NO	BSL
	7439-95-4	Magnesium	8.5E+01 J	4.3E+02	MG/KG		10/15	259 - 316	4.3E+02	3.6E+02	N/A	N/A		NO	NUT
	7439-96-5	Manganese	8.1E-01 J	9.1E+00	MG/KG		15/15	0.777 - 0.947	9.1E+00	9.3E+00	1.8E+02 N	6.5E+01	NCSSL	NO	BSL
	7439-97-6	Mercury	1.7E-02 J	2.9E-02 J	MG/KG		5/19	0.033 - 0.0405	2.9E-02	7.1E-02	2.3E+00 N	1.0E+00	NCSSL	NO	BSL
	7440-02-0	Nickel	3.4E-01 J	1.7E+00	MG/KG		15/15	0.518 - 0.631	1.7E+00	2.3E+00	1.5E+02 N	1.3E+02	NCSSL	NO	BSL

Table 2.2

Step 1 Screening, OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

UXO-17

MCB Camp Lejeune, North Carolina

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	7440-09-7	Potassium	7.4E+01 J	5.9E+02	MG/KG	MR17-IS13-5-7-10D	10/15	259 - 316	5.9E+02	3.6E+02	N/A	N/A		NO	NUT
	7782-49-2	Selenium	2.4E-01 J	6.6E-01	MG/KG	MR17-IS02-4-6-10D	3/19	0.518 - 0.631	6.6E-01	5.1E-01	3.9E+01 N	2.1E+00	NCSSL	NO	BSL
	7440-22-4	Silver	ND	ND	MG/KG		0/19	0.104 - 0.17	1.7E-01	1.3E-01	3.9E+01 N	3.4E+00	NCSSL	NO	DLBSL
	7440-23-5	Sodium	ND	ND	MG/KG		0/15	155 - 189	1.9E+02	6.8E+01	N/A	N/A		NO	NUT
	7440-28-0	Thallium	ND	ND	MG/KG		0/15	0.207 - 0.316	3.2E-01	3.8E-01	7.8E-02 N	N/A		YES	DLASL
	7440-62-2	Vanadium	1.2E+00	2.4E+01	MG/KG	MR17-IS14D-6-8-10D	15/15	0.648 - 0.789	2.4E+01	1.7E+01	3.9E+01 N	N/A		NO	BSL
	7440-66-6	Zinc	8.7E-01 J	7.0E+00	MG/KG	MR17-IS14D-6-8-10D	13/15	1.04 - 1.26	7.0E+00	6.6E+00	2.3E+03 N	1.2E+03	NCSSL	NO	BSL
	18540-29-9	Chromium (hexavalent)	ND	ND	MG/KG		0/3	0.542 - 0.565	5.7E-01	N/A	2.9E-01 C	3.8E+00	NCSSL	YES	DLASL

[1] Minimum/Maximum detected concentrations.

[2] Maximum concentration is used for screening.

[3] Background values are two times the arithmetic mean basewide background subsurface soil concentrations.

Background values are from *Final Base Background Soil Study Report, Marine Corps Base Camp Lejeune, North Carolina*, Baker Environmental, April 25, 2001.

[4] Oak Ridge National Laboratory (ORNL). June, 2011. Regional Screening Levels for Chemical Contaminants at Superfund Sites.

http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm. Residential soil RSLs. RSLs based on noncarcinogenic effects divided by 10

to account for exposure to more than one constituent that affects the same target organ.

RSL value for chromium(VI) used as surrogate for chromium.

The soil value of 400 mg/kg for lead is from the Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action

Facilities, USEPA, July 14, 1994.

[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)
Detection Limit Above Screening Level (DLASL), not quantitatively evaluated in HHRA

Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)
Detection Limit Below Screening Level (DLBSL)
Below Background Value (BBK)
Detection Limit Below Background Value (DLBBK)

Definitions:

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/
To Be Considered

COPC = Chemical of Potential Concern

N/A = Not available

NCSSL = North Carolina Soil Screening Levels (NCDENR, 2010)

Data Qualifiers:

J = Estimated Value

J+ = Value may be biased high, actual value may be lower

N = Tentative Identification, considered present

Screening Toxicity:

C = Carcinogenic

C* = N screening level < 10x C screening level, C screening value
used as screening levelC** = N screening level < 10x C screening level, therefore
N screening value/10 used as screening level

N = Noncarcinogenic

Table 2.2a

Step 2 Screening, Risk Ratio Screening for Subsurface Soil, Maximum Detected Concentration

UXO-17

MCB Camp Lejeune, North Carolina

Analyte	Detection Frequency	Maximum Detected Concentration (Qualifier)	Sample Location of Maximum Detected Concentration	Residential Soil RSL	Acceptable Risk Level	Corresponding Hazard Index ^a	Corresponding Cancer Risk ^b	Target Organ
Metals (mg/kg)								
Aluminum	15 / 15	1.4E+04	MR17-IS14D-6-8-10D	7.7E+04	1	0.2	NA	Neurological, Developmental
Arsenic	12 / 19	3.0E+00	MR17-IS13-5-7-10D	3.9E-01	1E-06	NA	8E-06	NA
Chromium	19 / 19	1.6E+01	MR17-IS14D-6-8-10D	2.9E-01	1E-06	NA	6E-05	NA
Iron	15 / 15	6.6E+03	MR17-IS02-4-6-10D	5.5E+04	1	0.1	NA	Central Nervous System
Cumulative Corresponding Hazard Index^c						0.3		
Cumulative Corresponding Cancer Risk^d							6E-05	
Total Neurological HI =							0.3	
Total Developmental HI =							0.2	

Notes:^a Corresponding Hazard Index equals maximum detected concentration divided by the RSL divided by the acceptable risk level.^b Corresponding Cancer Risk equals maximum detected concentration divided by the RSL divided by the acceptable risk level.^c Cumulative Corresponding Hazard Index equals sum of Corresponding Hazard Indices for each constituent.^d Cumulative Corresponding Cancer Risk equals sum of Corresponding Cancer Risks for each constituent.

Constituent selected as COPC if it contributes to an overall Hazard Index by target organ greater than 0.5 or Cumulative Corresponding Cancer Risk greater than 5E-05, otherwise, constituent not selected as COPC.

Constituents selected as COPCs are indicated by shading.

COPC = Constituent of Potential Concern

mg/kg = milligrams per kilogram

NA = Not available/not applicable.

Table 2.2b

Step 3 Screening, Risk Ratio for Subsurface Soil, 95% UCL Concentration

Site UXO-17

MCB Camp Lejeune, North Carolina

Analyte	Detection Frequency	95% UCL	95% UCL Rationale	Residential Soil RSL	Acceptable Risk Level	Corresponding Hazard Index ^a	Corresponding Cancer Risk ^b	Target Organ
Metals (mg/kg)								
Arsenic	12 / 19	1.1E+00 1, 3	95% KM-pb	3.9E-01	1E-06	NA	3E-06	NA
Chromium	19 / 19	1.1E+01 3	95% AppG	2.9E-01	1E-06	NA	4E-05	NA
Cumulative Corresponding Hazard Index^c						NA		
Cumulative Corresponding Cancer Risk^d							4E-05	

Notes:^a Corresponding Hazard Index equals maximum detected concentration divided by the RSL divided by the acceptable risk level.^b Corresponding Cancer Risk equals maximum detected concentration divided by the RSL divided by the acceptable risk level.^c Cumulative Corresponding Hazard Index equals sum of Corresponding Hazard Indices for each constituent.^d Cumulative Corresponding Cancer Risk equals sum of Corresponding Cancer Risks for each constituent.

Constituent selected as COPC if it contributes to an overall Hazard Index by target organ greater than 0.5 or Cumulative Corresponding Cancer Risk greater than 5E-05, otherwise, constituent not selected as COPC.

mg/kg = milligrams per kilogram

NA = Not available/not applicable.

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. March 2011. Prepared by Lockheed Martin Environmental Services).

Options: 95% Approximate GammaUCL (95% AppG); 95% Kaplan-Meier (Percentile Bootstrap) UCL (95% KM-pb)

UCL Rationale:

- (1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
- (2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
- (3) Test indicates data are gamma distributed.
- (4) Distribution tests are inconclusive
- (5) Max value used because 95% UCL greater than max.

Table 2.3

Step 1 Screening, OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Site UXO-17

MCB Camp Lejeune, North Carolina

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection [5]
Groundwater	71-55-6	1,1,1-Trichloroethane	ND	ND	UG/L	MR17-GW09-11C	0/8	1 - 1	1.0E+00	N/A	9.1E+02 N	2.0E+02	MCL, 15A NCAC 2L	NO	DLBSL
	79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	6.7E-02 C	2.0E-01	15A NCAC 2L	YES	DLASL
	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	5.9E+03 N	2.0E+05	15A NCAC 2L	NO	DLBSL
	79-00-5	1,1,2-Trichloroethane	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	2.4E-01 C**	5.0E+00	MCL	YES	DLASL
	75-34-3	1,1-Dichloroethane	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	2.4E+00 C	6.0E+00	15A NCAC 2L	NO	DLBSL
	75-35-4	1,1-Dichloroethene	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	3.4E+01 N	7.0E+00	MCL, 15A NCAC 2L	NO	DLBSL
	120-82-1	1,2,4-Trichlorobenzene	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	4.1E-01 C**	7.0E+01	MCL, 15A NCAC 2L	YES	DLASL
	96-12-8	1,2-Dibromo-3-chloropropane	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	3.2E-04 C	2.0E-01	MCL	YES	DLASL
	106-93-4	1,2-Dibromoethane	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	6.5E-03 C	4.0E-02	15A NCAC 2L	YES	DLASL
	95-50-1	1,2-Dichlorobenzene	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	3.7E+01 N	6.0E+02	MCL	NO	DLBSL
	107-06-2	1,2-Dichloroethane	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	1.5E-01 C*	5.0E+00	MCL, 15A NCAC 2L	YES	DLASL
	78-87-5	1,2-Dichloropropane	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	3.9E-01 C*	5.0E+00	MCL	YES	DLASL
	541-73-1	1,3-Dichlorobenzene	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	4.3E-01 C	6.0E-01	15A NCAC 2L	YES	DLASL
	106-46-7	1,4-Dichlorobenzene	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	4.3E-01 C	7.5E+01	MCL	YES	DLASL
	591-78-6	2-Hexanone	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	4.7E+00 N	6.0E+00	15A NCAC 2L	YES	DLASL
	67-64-1	Acetone	ND	ND	UG/L		0/8	12 - 12	1.2E+01	N/A	2.2E+03 N	6.0E+03	15A NCAC 2L	NO	DLBSL
	71-43-2	Benzene	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	4.1E-01 C	5.0E+00	MCL, 15A NCAC 2L	YES	DLASL
	75-27-4	Bromodichloromethane	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	1.2E-01 C	6.0E-02	15A NCAC 2L	YES	DLASL
	75-25-2	Bromoform	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	8.5E+00 C*	8.0E+01	MCL	NO	DLBSL
	74-83-9	Bromomethane	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	8.7E-01 N	4.0E+00	MCL	YES	DLASL
	75-15-0	Carbon disulfide	2 J	2 J	UG/L		1/8	5 - 5	2.0E+00	N/A	1.0E+02 N	7.0E+02	15A NCAC 2L	NO	BSL
	56-23-5	Carbon tetrachloride	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	4.4E-01 C	5.0E+00	MCL	YES	DLASL
	108-90-7	Chlorobenzene	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	9.1E+00 N	3.0E-01	15A NCAC 2L	NO	DLBSL
	75-00-3	Chloroethane	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	2.1E+03 N	1.0E+02	15A NCAC 2L	NO	DLBSL
	67-66-3	Chloroform	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	1.9E-01 C	8.0E+01	MCL	YES	DLASL
	74-87-3	Chloromethane	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	1.9E+01 N	7.0E+01	15A NCAC 2L	NO	DLBSL
	156-59-2	cis-1,2-Dichloroethene	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	7.3E+00 N	3.0E+00	MCL, 15A NCAC 2L	NO	DLBSL
	10061-01-5	cis-1,3-Dichloropropene	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	4.3E-01 C*	4.0E-01	15A NCAC 2L	YES	DLASL
	110-82-7	Cyclohexane	ND	ND	UG/L		0/8	2 - 2	2.0E+00	N/A	1.3E+03 N	N/A	N/A	NO	DLBSL
	124-48-1	Dibromochloromethane	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	1.5E-01 C	8.0E+01	MCL	YES	DLASL
												4.0E-01	15A NCAC 2L		

Table 2.3

Step 1 Screening, OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Site UXO-17

MCB Camp Lejeune, North Carolina

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background Value [3]	Screening Toxicity Value [4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection [5]
Groundwater	75-71-8	Dichlorodifluoromethane (Freon-12)	ND	ND	UG/L	MR17-GW09-11C	0/8	1 - 1	1.0E+00	N/A	2.0E+01 N	1.0E+03	15A NCAC 2L	NO	DLBSL
	100-41-4	Ethylbenzene	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	1.5E+00 C	7.0E+02	MCL	NO	DLBSL
	98-82-8	Isopropylbenzene	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	6.8E+01 N	7.0E+01	15A NCAC 2L	NO	DLBSL
	m&pXYLENE	m- and p-Xylene	ND	ND	UG/L		0/8	2 - 2	2.0E+00	N/A	2.0E+01 N	N/A	N/A	NO	DLBSL
	79-20-9	Methyl acetate	ND	ND	UG/L		0/8	2 - 2	2.0E+00	N/A	3.7E+03 N	N/A	N/A	NO	DLBSL
	108-87-2	Methylcyclohexane	ND	ND	UG/L		0/8	2 - 2	2.0E+00	N/A	8.8E+01 N	N/A	N/A	NO	DLBSL
	75-09-2	Methylene chloride	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	4.8E+00 C	5.0E+00	MCL, 15A NCAC 2L	YES	DLASL
	1634-04-4	Methyl-tert-butyl ether (MTBE)	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	1.2E+01 C	2.0E+02	15A NCAC 2L	NO	DLBSL
	95-47-6	o-Xylene	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	2.0E+01 N	N/A	N/A	NO	DLBSL
	100-42-5	Styrene	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	1.6E+02 N	1.0E+02	MCL	NO	DLBSL
	127-18-4	Tetrachloroethene	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	1.1E-01 C	5.0E+00	MCL	YES	DLASL
	108-88-3	Toluene	2	2	UG/L		1/8	1 - 1	2.0E+00	N/A	2.3E+02 N	1.0E+03	MCL	NO	BSL
	156-60-5	trans-1,2-Dichloroethene	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	1.1E+01 N	1.0E+02	MCL, 15A NCAC 2L	NO	DLBSL
	10061-02-6	trans-1,3-Dichloropropene	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	4.3E-01 C*	4.0E-01	15A NCAC 2L	YES	DLASL
	79-01-6	Trichloroethene	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	2.0E+00 C*	5.0E+00	MCL	NO	DLBSL
	75-69-4	Trichlorofluoromethane (Freon-11)	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	1.3E+02 N	2.0E+03	15A NCAC 2L	NO	DLBSL
	75-01-4	Vinyl chloride	ND	ND	UG/L		0/8	1 - 1	1.0E+00	N/A	1.6E-02 C	2.0E+00	MCL	YES	DLASL
	92-52-4	1,1-Biphenyl	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	8.3E-02 N	4.0E+02	15A NCAC 2L	YES	DLASL
	95-95-4	2,4,5-Trichlorophenol	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	3.7E+02 N	N/A	N/A	NO	DLBSL
	88-06-2	2,4,6-Trichlorophenol	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	3.7E+00 C**	N/A	N/A	YES	DLASL
	120-83-2	2,4-Dichlorophenol	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.1E+01 N	N/A	N/A	NO	DLBSL
	105-67-9	2,4-Dimethylphenol	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	7.3E+01 N	1.0E+02	15A NCAC 2L	NO	DLBSL
	51-28-5	2,4-Dinitrophenol	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	7.3E+00 N	N/A	N/A	NO	DLBSL
	121-14-2	2,4-Dinitrotoluene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	2.2E-01 C	N/A	N/A	YES	DLASL
	606-20-2	2,6-Dinitrotoluene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	3.7E+00 N	N/A	N/A	YES	DLASL
	91-58-7	2-Chloronaphthalene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	2.9E+02 N	N/A	N/A	NO	DLBSL
	95-57-8	2-Chlorophenol	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.8E+01 N	4.0E-01	15A NCAC 2L	NO	DLBSL
	91-57-6	2-Methylnaphthalene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.5E+01 N	3.0E+01	15A NCAC 2L	NO	DLBSL
	95-48-7	2-Methylphenol	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.8E+02 N	N/A	N/A	NO	DLBSL
	88-74-4	2-Nitroaniline	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	3.7E+01 N	N/A	N/A	NO	DLBSL
	88-75-5	2-Nitrophenol	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.8E+01 N	N/A	N/A	NO	DLBSL
	m&pCRESOL	3- and 4-Methylphenol	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.8E+01 N	N/A	N/A	NO	DLBSL
	91-94-1	3,3'-Dichlorobenzidine	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.5E-01 C	N/A	N/A	YES	DLASL
	99-09-2	3-Nitroaniline	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	N/A	N/A	N/A	YES	DLASL
	534-52-1	4,6-Dinitro-2-methylphenol	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	2.9E-01 N	N/A	N/A	YES	DLASL
	101-55-3	4-Bromophenyl-phenylether	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	N/A	N/A	N/A	YES	DLASL
	59-50-7	4-Chloro-3-methylphenol	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	3.7E+02 N	N/A	N/A	NO	DLBSL
	106-47-8	4-Chloroaniline	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	3.4E-01 C	N/A	N/A	YES	DLASL
	7005-72-3	4-Chlorophenyl-phenylether	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.8E+01 N	N/A	N/A	NO	DLBSL
	100-01-6	4-Nitroaniline	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	3.4E+00 C*	N/A	N/A	YES	DLASL
	100-02-7	4-Nitrophenol	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.2E-01 C	N/A	N/A	YES	DLASL
	83-32-9	Acenaphthene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	2.2E+02 N	8.0E+01	15A NCAC 2L	NO	DLBSL
	208-96-8	Acenaphthylene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	2.2E+02 N	2.0E+02	15A NCAC 2L	NO	DLBSL
	98-86-2	Acetophenone	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	3.7E+02 N	N/A	N/A	NO	DLBSL
	120-12-7	Anthracene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.1E+03 N	2.0E+03	15A NCAC 2L	NO	DLBSL
	1912-24-9	Atrazine	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	2.9E-01 C	3.0E+00	MCL, 15A NCAC 2L	YES	DLASL
	100-52-7	Benzaldehyde	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	3.7E+02 N	N/A	N/A	NO	DLBSL
	56-55-3	Benzo(a)anthracene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	2.9E-02 C	5.0E-02	15A NCAC 2L	YES	DLASL
	50-32-8	Benzo(a)pyrene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	2.9E-03 C	2.0E-01	MCL	YES	DLASL
	205-99-2	Benzo(b)fluoranthene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	2.9E-02 C	5.0E-02	15A NCAC 2L	YES	DLASL
	191-24-2	Benzo(g,h,i)perylene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.1E+02 N	2.0E+02	15A NCAC 2L	NO	DLBSL

Table 2.3

Step 1 Screening, OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Site UXO-17

MCB Camp Lejeune, North Carolina

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Groundwater	207-08-9	Benzol(k)fluoranthene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	2.9E-01 C	5.0E-01	15A NCAC 2L	YES	DLASL
	111-91-1	bis(2-Chloroethoxy)methane	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.1E+01 N	N/A	N/A	NO	DLBSL
	111-44-4	bis(2-Chloroethoxy)ether	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.2E-02 C	3.0E-02	15A NCAC 2L	YES	DLASL
	39638-32-9	bis(2-Chloroisopropyl)ether	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	N/A	N/A	N/A	NO	NTX
	117-81-7	bis(2-Ethylhexyl)phthalate	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	4.8E+00 C	6.0E+00	MCL	YES	DLASL
												3.0E+00	15A NCAC 2L		
	85-68-7	Butylbenzylphthalate	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	3.5E+01 C	1.0E+03	15A NCAC 2L	NO	DLBSL
	105-60-2	Caprolactam	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.8E+03 N	4.0E+03	15A NCAC 2L	NO	DLBSL
	86-74-8	Carbazole	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	N/A	N/A	N/A	YES	DLASL
	218-01-9	Chrysene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	2.9E+00 C	5.0E+00	15A NCAC 2L	YES	DLASL
	53-70-3	Dibenz(a,h)anthracene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	2.9E-03 C	5.0E-03	15A NCAC 2L	YES	DLASL
	132-64-9	Dibenzofuran	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	3.7E+00 N	N/A	N/A	YES	DLASL
	84-66-2	Diethylphthalate	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	2.9E+03 N	6.0E+03	15A NCAC 2L	NO	DLBSL
	131-11-3	Dimethyl phthalate	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	N/A	N/A	N/A	YES	DLASL
	84-74-2	Di-n-butylphthalate	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	3.7E+02 N	7.0E+02	15A NCAC 2L	NO	DLBSL
	117-84-0	Di-n-octylphthalate	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	4.8E+00 C	1.0E+02	15A NCAC 2L	YES	DLASL
	206-44-0	Fluoranthene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.5E+02 N	3.0E+02	15A NCAC 2L	NO	DLBSL
	86-73-7	Fluorene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.5E+02 N	3.0E+02	15A NCAC 2L	NO	DLBSL
	118-74-1	Hexachlorobenzene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	4.2E-02 C	1.0E+00	MCL	YES	DLASL
												2.0E-02	15A NCAC 2L		
	87-68-3	Hexachlorobutadiene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	8.6E-01 C*	4.0E-01	15A NCAC 2L	YES	DLASL
	77-47-4	Hexachlorocyclopentadiene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	2.2E+01 N	5.0E+01	MCL	NO	DLBSL
	67-72-1	Hexachloroethane	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	3.7E+00 C**	N/A	N/A	YES	DLASL
	193-39-5	Indeno(1,2,3-cd)pyrene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	2.9E-02 C	5.0E-02	15A NCAC 2L	YES	DLASL
	78-59-1	Isophorone	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	7.1E+01 C	4.0E+01	15A NCAC 2L	NO	DLBSL
	91-20-3	Naphthalene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.4E-01 C*	6.0E+00	15A NCAC 2L	YES	DLASL
	621-64-7	n-Nitroso-di-n-propylamine	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	9.6E-03 C	N/A	N/A	YES	DLASL
	86-30-6	n-Nitrosodiphenylamine	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.4E+01 C	N/A	N/A	NO	DLBSL
	98-95-3	Nitrobenzene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.2E-01 C	N/A	N/A	YES	DLASL
	87-86-5	Pentachlorophenol	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.7E-01 C	1.0E+00	MCL	YES	DLASL
												3.0E-01	15A NCAC 2L		
	85-01-8	Phenanthrene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.1E+03 N	2.0E+02	15A NCAC 2L	NO	DLBSL
	108-95-2	Phenol	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.1E+03 N	3.0E+01	15A NCAC 2L	NO	DLBSL
	129-00-0	Pyrene	ND	ND	UG/L		0/8	5 - 5	5.0E+00	N/A	1.1E+02 N	2.0E+02	15A NCAC 2L	NO	DLBSL
	121-14-2	2,4-Dinitrotoluene	1.1E-01 J	1.1E-01 J	UG/L	MR17-MW10-10D	1/11	0.15 - 5	1.1E-01	N/A	2.2E-01 C	N/A		NO	BSL
	606-20-2	2,6-Dinitrotoluene	ND	ND	UG/L		0/11	0.15 - 5	5.0E+00	N/A	3.7E+00 N	N/A		YES	DLASL
	98-95-3	Nitrobenzene	ND	ND	UG/L		0/11	0.15 - 2.5	2.5E+00	N/A	1.2E-01 C	N/A		YES	DLASL
	99-35-4	1,3,5-Trinitrobenzene	ND	ND	UG/L		0/11	0.15 - 2.5	2.5E+00	N/A	1.1E+02 N	N/A		NO	DLBSL
	99-65-0	1,3-Dinitrobenzene	ND	ND	UG/L		0/11	0.15 - 2.5	2.5E+00	N/A	3.7E-01 N	N/A		YES	DLASL
	118-96-7	2,4,6-Trinitrotoluene	ND	ND	UG/L		0/11	0.15 - 2.5	2.5E+00	N/A	1.8E+00 C**	N/A		YES	DLASL
	35572-78-2	2-Amino-4,6-dinitrotoluene	ND	ND	UG/L		0/11	0.15 - 5	5.0E+00	N/A	7.3E+00 N	N/A		NO	DLBSL
	88-72-2	2-Nitrotoluene	1.9E-01 J	1.9E-01 J	UG/L	MR17-MW10-10D	1/11	0.299 - 5	1.9E-01	N/A	3.1E-01 C	N/A		NO	BSL
	99-08-1	3-Nitrotoluene	1.1E-01 J	1.1E-01 J	UG/L		1/11	0.299 - 5	1.1E-01	N/A	3.7E-01 N	N/A		NO	BSL
	19406-51-0	4-Amino-2,6-dinitrotoluene	ND	ND	UG/L	MR17-MW10-10D	0/11	0.15 - 5	5.0E+00	N/A	7.3E+00 N	N/A		NO	DLBSL
	99-99-0	4-Nitrotoluene	ND	ND	UG/L		0/11	0.15 - 5	5.0E+00	N/A	4.2E+00 C*	N/A		YES	DLASL
	2691-41-0	HMX	ND	ND	UG/L		0/11	0.15 - 2.5	2.5E+00	N/A	1.8E+02 N	N/A		NO	DLBSL
	55-63-0	Nitroglycerin	ND	ND	UG/L		0/7	0.374 - 1.15	1.2E+00	N/A	3.7E-01 N	N/A		YES	DLASL
	14797-73-0	Perchlorate	8.8E-02 J	4.7E-01	UG/L	ASR2_212-FR2-TW04-08D	5/11	0.2 - 0.5	4.7E-01	N/A	2.6E+00 N	N/A		NO	BSL
	78-11-5	PETN	ND	ND	UG/L		0/7	0.374 - 0.421	4.2E-01	N/A	N/A	N/A		NO	NTX
	121-82-4	RDX	1.2E-01 J	1.4E-01 J	UG/L	MR17-MW09-10D	2/11	0.299 - 2.5	1.4E-01	N/A	6.1E-01 C	N/A		NO	BSL
	479-45-8	Tetryl	2.9E-01 J	2.9E-01 J	UG/L		1/11	0.299 - 5	2.9E-01	N/A	1.5E+01 N	N/A		NO	BSL
	7429-90-5	Aluminum	1.4E+02 J-	2.0E+03 J-	UG/L	MR17-MW12-10D	7/7	50 - 50	2.0E+03	1.9E+03	3.7E+03 N	50 - 200	Secondary MCL	NO	BSL
	7440-36-0	Antimony	ND	ND	UG/L		0/7	2 - 2	2.0E+00	3.3E+00	1.5E+00 N	6.0E+00	MCL	YES	DLASL
	7440-38-2	Arsenic	ND	ND	UG/L		0/11	1.5 - 6.8	6.8E+00	5.8E+00	4.5E-02 C	1.0E+01	MCL, 15A NCAC 2L	YES	DLASL
	7440-39-3	Barium	1.5E+01 J	8.1E+01	UG/L	MR17-MW14-10D	11/11	10 - 200	8.1E+01	8.6E+01	7.3E+02 N	2.0E+03	MCL, 15A NCAC 2L	NO	BSL
											7.0E+02	15A NCAC 2L			
	7440-41-7	Beryllium	2.6E-01 J	2.6E-01 J	UG/L	MR17-MW14-10D	1/7	1.25 - 1.25	2.6E-01	3.1E-01	7.3E+00 N	4.0E+00	MCL	NO	BSL

Table 2.3

Step 1 Screening, OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Site UXO-17

MCB Camp Lejeune, North Carolina

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Groundwater	7440-43-9	Cadmium	ND	ND	UG/L		0/11	0.5 - 0.68	6.8E-01	3.6E-01	1.8E+00 N	5.0E+00	MCL	NO	DLBSL
	7440-70-2	Calcium	1.3E+03	2.9E+04	UG/L	MR17-MW12-10D	7/7	1250 - 1250	2.9E+04	6.9E+04	N/A	2.0E+00	15A NCAC 2L	NO	NUT
	7440-47-3	Chromium	6.4E-01 J	1.0E+01	UG/L	ASR2_212-FR2-TW01-08D	5/11	2.5 - 10	1.0E+01	3.1E+00	4.3E-02 C	1.0E+02	MCL	YES	ASL
	7440-48-4	Cobalt	1.3E+00 J	4.3E+00	UG/L	MR17-MW14-10D	2/7	3.12 - 3.12	4.3E+00	3.4E+00	1.1E+00 N	1.0E+01	15A NCAC 2L	YES	ASL
	7440-50-8	Copper	2.5E+00	2.5E+00	UG/L	MR17-MW12-10D	1/7	2.5 - 2.5	2.5E+00	2.8E+00	1.5E+02 N	1.3E+03	MCL	NO	BSL
	7439-89-6	Iron	4.7E+01 J-	7.2E+02 J-	UG/L	MR17-MW15D-10D	7/7	25 - 25	7.2E+02	6.0E+03	2.6E+03 N	1.0E+03	15A NCAC 2L	NO	BSL
	7439-92-1	Lead	4.8E-01 J	4.1E+00 J	UG/L	ASR2_212-FR2-TW01-08D	5/11	0.75 - 3	4.1E+00	2.8E+00	N/A N	3.0E+02	MCL, 15A NCAC 2L	NO	BSL
	7439-95-4	Magnesium	4.9E+02 J	3.5E+03	UG/L	MR17-MW12-10D	7/7	1250 - 1250	3.5E+03	6.4E+03	N/A	1.5E+01	15A NCAC 2L	NO	NUT
	7439-96-5	Manganese	5.1E+00	8.1E+01	UG/L	MR17-MW12-10D	7/7	3.75 - 3.75	8.1E+01	2.1E+02	8.8E+01 N	5.0E+01	15A NCAC 2L	NO	BSL
	7439-97-6	Mercury	ND	ND	UG/L		0/11	0.1 - 0.2	2.0E-01	1.0E-01	2.0E+00	1.0E+00	MCL	NO	DLBSL
	7440-02-0	Nickel	7.8E-01 J	6.1E+00	UG/L	MR17-MW14-10D	6/7	2.5 - 2.5	6.1E+00	8.0E+00	7.3E+01 N	1.0E+02	15A NCAC 2L	NO	BSL
	7440-09-7	Potassium	4.0E+02 J	3.7E+03	UG/L	MR17-MW12-10D	7/7	1250 - 1250	3.7E+03	3.3E+03	N/A	2.0E+00	15A NCAC 2L	NO	NUT
	7782-49-2	Selenium	9.2E-01 J	6.9E+00 J	UG/L	ASR2_212-FR2-TW03-08D	2/11	2.5 - 5	6.9E+00	3.1E+00	1.8E+01 N	5.0E+01	MCL	NO	BSL
	7440-22-4	Silver	ND	ND	UG/L		0/11	0.5 - 1.4	1.4E+00	7.7E-01	1.8E+01 N	2.0E+01	15A NCAC 2L	NO	DLBSL
	7440-23-5	Sodium	1.9E+03	9.0E+03	UG/L	MR17-MW13-10D	7/7	1250 - 1250	9.0E+03	2.3E+04	N/A	2.0E+00	15A NCAC 2L	NO	NUT
	7440-28-0	Thallium	ND	ND	UG/L		0/7	1 - 1	1.0E+00	3.8E+00	N/A	2.0E+00	MCL	NO	NTX
	7440-62-2	Vanadium	4.2E+00	4.3E+00	UG/L	MR17-MW12-10D	2/7	3.12 - 3.12	4.3E+00	4.7E+00	1.8E+01 N	1.0E+03	15A NCAC 2L	NO	BSL
	7440-66-6	Zinc	1.5E+00 J-	4.2E+01 J-	UG/L	MR17-MW09-10D	7/7	5 - 5	4.2E+01	4.2E+01	1.1E+03 N	1.0E+03	15A NCAC 2L	NO	BSL
	18540-29-9	Chromium (hexavalent)	ND	ND	UG/L		0/3	0.02 - 0.02	2.0E-02	N/A	4.3E-02 C	1.0E+02	MCL	NO	DLBSL
												1.0E+01	15A NCAC 2L		

[1] Minimum/Maximum detected concentrations.

[2] Maximum concentration is used for screening.

[3] Background values are two times the arithmetic mean basewide background shallow groundwater concentrations. Background values are from Baker Environmental, Draft Base Background Groundwater Study, Marine Corps Base, MCB Camp Lejeune, North Carolina, August 2002

[4] Oak Ridge National Laboratory (ORNL), June 2011. Regional Screening Levels for Chemical Contaminants at Superfund Sites.

Tap Water RSLs (based on 10⁻⁶ for carcinogens and HQ of 0.1 for noncarcinogens). [Online]. Available: <http://epa-prgs.com/chemicals/index.shtml>

RSL value for 1,4-dichlorobenzene used as surrogate for 1,3-dichlorobenzene.

RSL value for n-hexane used as surrogate for methylcyclohexane.

RSL value for Chromium(VI) used as surrogate for chromium.

[5] Rationale Codes

Selection Reason:

Above Screening Levels (ASL)

Deletion Reason: Detection Limit Above Screening Level (DLASL), not quantitatively evaluated in HHRA

No Toxicity Information (NTX)

Essential Nutrient (NUT)

Below Screening Level (BSL)

Detection Limit Below Screening Level (DLBSL)

Definitions:

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/

To Be Considered

COPC = Chemical of Potential Concern

MCL = Maximum Contaminant Level from EPA's National Primary Drinking Water

Standards

N/A = Not available

15A NCAC 2L = North Carolina Classifications and Groundwater Quality Standards, Amended January 2010.

Data Qualifiers:

J = Estimated Value

J- = Value may be biased low, actual value may be higher

Screening Toxicity:

C = Carcinogenic

C* = N screening level < 100x C screening level, C screening value

used as screening level

C** = N screening level < 10x C screening level, therefore

N screening value/10 used as screening level

N = Noncarcinogenic

Table 2.3a

Step 2 Screening, Risk Ratio for Groundwater, Maximum Detected Concentration

Site UXO-17

MCB Camp Lejeune, North Carolina

Analyte	Detection Frequency	Maximum Detected Concentration (Qualifier)	Sample Location of Maximum Detected Concentration	Tap Water RSL	Acceptable Risk Level	Corresponding Hazard Index ^a	Corresponding Cancer Risk ^b	Target Organ
Metals (ug/L)								
Chromium	5 / 11	1.0E+01	ASR2_212-FR2-TW01-08D	4.3E-02	1E-06	NA	2E-04	NA
Cobalt	2 / 7	4.3E+00	MR17-MW14-10D	1.1E+01	1	0.4	NA	Thyroid
Cumulative Corresponding Hazard Index^c						NA		
Cumulative Corresponding Cancer Risk^d							2E-04	
Total Thyroid HI =								0.4

Notes:^a Corresponding Hazard Index equals maximum detected concentration divided by the RSL divided by the acceptable risk level.^b Corresponding Cancer Risk equals maximum detected concentration divided by the RSL divided by the acceptable risk level.^c Cumulative Corresponding Hazard Index equals sum of Corresponding Hazard Indices for each constituent.^d Cumulative Corresponding Cancer Risk equals sum of Corresponding Cancer Risks for each constituent.

Constituent selected as COPC if it contributes to an overall Hazard Index by target organ greater than 0.5 or Cumulative Corresponding Cancer Risk greater than 5E-05, otherwise, constituent not selected as COPC.

Constituents selected as COPCs are indicated by shading.

COPC = Constituent of Potential Concern

ug/L = micrograms per liter

Table 2.3b

Step 3 Screening, Risk Ratio for Groundwater, 95% UCL Concentration

Site UXO-17

MCB Camp Lejeune, North Carolina

Analyte	Detection Frequency	95% UCL	95% UCL Rationale	Tap Water RSL	Acceptable Risk Level	Corresponding Hazard Index ^a	Corresponding Cancer Risk ^b	Target Organ	
Metals (ug/L)									
Chromium	5 / 11	4.1E+00	1, 2, 3	95% KM-t	4.3E-02	1E-06	NA	1E-04	NA
Cumulative Corresponding Hazard Index ^c						NA			
Cumulative Corresponding Cancer Risk ^d							1E-04		

Notes:^a Corresponding Hazard Index equals maximum detected concentration divided by the RSL divided by the acceptable risk level.^b Corresponding Cancer Risk equals maximum detected concentration divided by the RSL divided by the acceptable risk level.^c Cumulative Corresponding Hazard Index equals sum of Corresponding Hazard Indices for each constituent.^d Cumulative Corresponding Cancer Risk equals sum of Corresponding Cancer Risks for each constituent.

Constituent selected as COPC if it contributes to an overall Hazard Index by target organ greater than 0.5 or Cumulative Corresponding Cancer Risk greater than 5E-05,

Constituents selected as COPCs are indicated by shading.

See Section 5.3.3 for risk management discussion that eliminates chromium from consideration as a COPC for groundwater.

ug/L = micrograms per liter

HI = Hazard Index

NA = Not available/not applicable.

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. March 2011. Prepared by Lockheed Martin Environmental Services).

Options: 95% Kaplan-Meier (t) UCL (95% KM-t)

UCL Rationale:

- (1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
- (2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
- (3) Test indicates data are gamma distributed.
- (4) Distribution tests are inconclusive
- (5) Max value used because 95% UCL greater than max.

Table 2.4
 Step 1 Screening, OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
 Site UXO-17
 MCB Camp Lejeune, North Carolina

Scenario Timeframe: Current/Future
 Medium: Groundwater
 Exposure Medium: Air

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Groundwater (Vapor Intrusion into Industrial Indoor Air)	75-15-0	Carbon disulfide	2.0E+00 J	2.0E+00 J	UG/L	MR17-GW09-11C	1/8	5 - 5	2.0E+00	NA	6.8E+02	NA	NA	NO	BSL
	108-88-3	Toluene	2.0E+00	2.0E+00	UG/L	MR17-GW09-11C	1/8	1 - 1	2.0E+00	NA	1.3E+04	NA	NA	NO	BSL
	88-72-2	2-Nitrotoluene	1.9E-01 J	1.9E-01 J	UG/L	MR17-MW10-10D	1/11	0.299 - 5	1.9E-01	NA	NA	NA	NA	NO	NTX

[1] Minimum/Maximum detected concentrations.
 [2] Maximum concentration is used for screening.
 [3] Background values not available.
 [4] Generic groundwater vapor intrusion screening levels (USEPA, 2002); see Table 2.4a
 [5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)
 Deletion Reason: No Toxicity Information (NTX)
 Below Screening Level (BSL)

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/
 To Be Considered
 C = Carcinogenic
 COPC = Chemical of Potential Concern
 J = Estimated Value
 N = Noncarcinogenic
 NA = Not applicable/not available
 µg/L = microgram per liter

Table 2.4 Supplement A

Development of Target Groundwater Concentrations for Protection of Industrial Indoor Air

Site UXO-17

MCB Camp Lejeune, North Carolina

Parameter	Symbol	Value
Henry's Law Constant	H	Chemical-specific
Empirical Attenuation Factor	α	1.0E-03

CAS Number	Chemical	Cancer based Concentration in Indoor Air ($\mu\text{g}/\text{m}^3$) ⁽²⁾	Non-cancer based Concentration in Indoor Air ($\mu\text{g}/\text{m}^3$) ⁽²⁾	Target Concentration in Indoor Air ($\mu\text{g}/\text{m}^3$) ⁽¹⁾	Concentration in Soil Gas ($\mu\text{g}/\text{m}^3$)	Henry's Law Constant ⁽³⁾	Target Concentration in Groundwater ($\mu\text{g}/\text{m}^3$)	Target Concentration in Groundwater ($\mu\text{g}/\text{L}$)
75-15-0	Carbon disulfide	NA	3.1E+02	3.1E+02 N	3.1E+05	4.6E-01	6.8E+05	6.8E+02
108-88-3	Toluene	NA	2.2E+03	2.2E+03 N	2.2E+06	1.7E-01	1.3E+07	1.3E+04
88-72-2	2-Nitrotoluene	NA	NA	NA	NA	2.7E-04	NA	NA

(1) The vapor intrusion screening levels [i.e., target groundwater concentration from Table 2c, Subsurface Vapor Intrusion Guidance (USEPA, 2002)] were updated using the methodology presented in Appendix D of Subsurface Vapor Intrusion Guidance (USEPA, 2002).

(2) Concentration in indoor air based on USEPA Industrial Indoor Air Regional Screening Level (RSL; based on target risk = 1×10^{-6} or target hazard index = 0.1).

(3) Dimensionless Henry's Law Constant at System Temperature (see Table 2.4b for calculation).

$$C_{\text{gw}} [\mu\text{g}/\text{L}] = C_{\text{target,ia}} (\mu\text{g}/\text{m}^3) \times 10^{-3} \text{ m}^3/\text{L} \times 1/H'_{\text{TS}} \times 1/\alpha$$

where,

C_{gw} Target groundwater concentration

$C_{\text{target,ia}}$ Target indoor air concentration (i.e., RSLs for industrial air),

α Attenuation factor ([AF] default ratio of indoor air concentration to source vapor concentration; 1×10^{-3}), and

H'_{TS} Henry's law constant at system (groundwater) temperature (dimensionless)

C = Carcinogenic

N = Noncarcinogenic

NA = Not available/not applicable

$\mu\text{g}/\text{L}$ = micrograms per liter

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Table 2.4 Supplement B

Calculation of Temperature Specific Henry's Law Constants

Site UXO-17

MCB Camp Lejeune, North Carolina

Parameter	Symbol	Value
System Temperature (deg K)	TS	2.93E+02
Groundwater Temperature (deg C)		1.95E+01
Gas Constant (cal/mole-K)	R _C	1.99E+00
Gas Constant (atm-m ³ /mole-K)	R	8.21E-05

Chemical	CAS Number	Henry's Law Constant at Reference Temperature (atm-m ³ /mole)	Reference Temperature T _R (deg C)	Enthalpy of Vaporization at the Normal Boiling Point (cal/mole)	Normal Boiling Point (deg K)	Normal Critical Temperature (deg K)	Reference Temperature T _R (deg K)	T _B /T _C	Value of Exponent n as a function of T _B /T _C	Enthalpy of Vaporization at the System Temperature (cal/mole)	Dimensionless Henry's Law Constant at System Temperature
Carbon disulfide	75-15-0	1.4E-02	2.4E+01	6.4E+03	3.2E+02	5.5E+02	3.0E+02	5.8E-01	3.1E-01	6.6E+03	4.6E-01
Toluene	108-88-3	6.6E-03	2.5E+01	8.5E+03	4.1E+02	6.2E+02	3.0E+02	6.7E-01	3.8E-01	1.0E+04	1.7E-01
2-Nitrotoluene	88-72-2	1.3E-05	2.5E+01	1.1E+04	5.3E+02	7.9E+02	3.0E+02	6.7E-01	3.8E-01	1.4E+04	2.7E-04

Physical and chemical properties were obtained from the Johnson and Ettinger Model Vlookup Sheet (EPA, 2004) except for Henry's Law Constant and reference temperature.

References for Henry's Law Constants are presented in the *Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites* (Oak Ridge National Laboratory, June 2011).

Site-specific average groundwater temperature based on October 2008, December 2010, and July 2011 sampling events.

Dimensionless Henry's law constant at the system temperature:

$$H'_{TS} = \frac{\exp\left[-\frac{\Delta H_{v,TS}}{R_c T_s} \left(\frac{1}{T_s} - \frac{1}{T_R}\right)\right] H_R}{RT_s}$$

where,

H'_{TS} = Henry's law constant at the system temperature (dimensionless)ΔH_{v,TS} = Enthalpy of vaporization at the system temperature (cal/mol)T_S = System temperature (°K)T_R = Henry's law constant reference temperature (°K)H_R = Henry's law constant at the reference temperature (atm-m³/mol)R_c = Gas constant (= 1.9872 cal/mol - °K)R = Gas constant (= 8.205 x 10⁻⁵ atm-m³/mol-°K)

Enthalpy of vaporization at the system temperature:

$$\Delta H_{v,TS} = \Delta H_{v,b} \left[\frac{(1 - T_s/T_c)}{(1 - T_b/T_c)} \right]^n$$

where,

ΔH_{v,TS} = Enthalpy of vaporization at the system temperature (cal/mol)ΔH_{v,b} = Enthalpy of vaporization at the normal boiling point (cal/mol)T_S = System temperature (°K)T_C = Critical temperature (°K)T_B = Normal boiling point (°K)n = Constant (unitless) (The value of n is a function of the ratio of T_B/T_C.)

Table 2.5
Step 1 Screening, OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Site UXO-17
MCB Camp Lejeune, North Carolina

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Groundwater (Vapor Intrusion into Residential Indoor Air)	75-15-0	Carbon disulfide	2.0E+00 J	2.0E+00 J	UG/L	MR17-GW09-11C	1/8	5 - 5	2.0E+00	NA	1.6E+02	NA	NA	NO	BSL
	108-88-3	Toluene	2.0E+00	2.0E+00	UG/L	MR17-GW09-11C	1/8	1 - 1	2.0E+00	NA	3.0E+03	NA	NA	NO	BSL
	88-72-2	2-Nitrotoluene	1.9E-01 J	1.9E-01 J	UG/L	MR17-MW10-10D	1/11	0.299 - 5	1.9E-01	NA	NA	NA	NA	NO	NTX

[1] Minimum/Maximum detected concentrations.

[2] Maximum concentration is used for screening.

[3] Background values not available.

[4] Generic groundwater vapor intrusion screening levels (USEPA, 2002); see Table 2.5a

[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)
Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/
To Be Considered

C = Carcinogenic

COPC = Chemical of Potential Concern

J = Estimated Value

N = Noncarcinogenic

NA = Not applicable/not available

µg/L = microgram per liter

Table 2.5 Supplement A

Development of Target Groundwater Concentrations for Protection of Residential Indoor Air

Site UXO-17

MCB Camp Lejeune, North Carolina

Parameter	Symbol	Value
Henry's Law Constant	H	Chemical-specific
Empirical Attenuation Factor	α	1.0E-03

CAS Number	Chemical	Cancer based Concentration in Indoor Air ($\mu\text{g}/\text{m}^3$) ⁽²⁾	Non-cancer based Concentration in Indoor Air ($\mu\text{g}/\text{m}^3$) ⁽²⁾	Target Concentration in Indoor Air ($\mu\text{g}/\text{m}^3$) ⁽¹⁾	Concentration in Soil Gas ($\mu\text{g}/\text{m}^3$)	Henry's Law Constant ⁽³⁾	Target Concentration in Groundwater ($\mu\text{g}/\text{m}^3$)	Target Concentration in Groundwater ($\mu\text{g}/\text{L}$)
75-15-0	Carbon disulfide	NA	7.3E+01	7.3E+01 N	7.3E+04	4.6E-01	1.6E+05	1.6E+02
108-88-3	Toluene	NA	5.2E+02	5.2E+02 N	5.2E+05	1.7E-01	3.0E+06	3.0E+03
88-72-2	2-Nitrotoluene	NA	NA	NA	NA	2.7E-04	NA	NA

(1) The vapor intrusion screening levels [i.e., target groundwater concentration from Table 2c, Subsurface Vapor Intrusion Guidance (USEPA, 2002)] were updated using the methodology presented in Appendix D of Subsurface Vapor Intrusion Guidance (USEPA, 2002).

(2) Concentration in indoor air based on USEPA Residential Indoor Air Regional Screening Level (RSL; based on target risk = 1×10^{-6} or target hazard index = 0.1).

(3) Dimensionless Henry's Law Constant at System Temperature (see Table 2.4b for calculation).

$$C_{\text{gw}} [\mu\text{g}/\text{L}] = C_{\text{target,ia}} (\mu\text{g}/\text{m}^3) \times 10^{-3} \text{ m}^3/\text{L} \times 1/H'_{\text{TS}} \times 1/\alpha$$

where,

C_{gw} Target groundwater concentration

$C_{\text{target,ia}}$ Target indoor air concentration (i.e., RSLs for industrial air),

α Attenuation factor ([AF] default ratio of indoor air concentration to source vapor concentration; 1×10^{-3}), and

H'_{TS} Henry's law constant at system (groundwater) temperature (dimensionless)

C = Carcinogenic

N = Noncarcinogenic

NA = Not available/not applicable

$\mu\text{g}/\text{L}$ = micrograms per liter

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Table 2.6

Step 1 Screening, OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Site UXO-17

MCB Camp Lejeune, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Surface Water	121-14-2	2,4-Dinitrotoluene	ND	ND	UG/L	MR17-SW01-10D	0/1	1.5E-02	1.5E-02	N/A	3.4E+00 NR	2.2E-01	R-c	NO	DLBSL
	606-20-2	2,6-Dinitrotoluene	ND	ND	UG/L		0/1	1.5E-02	1.5E-02	N/A	3.7E+00 R	N/A		NO	DLBSL
	98-95-3	Nitrobenzene	ND	ND	UG/L		0/1	1.5E-02	1.5E-02	N/A	3.0E+01 NR	1.2E-01	R-c	NO	DLBSL
	99-35-4	1,3,5-Trinitrobenzene	ND	ND	UG/L		0/1	1.5E-02	1.5E-02	N/A	1.1E+02 R-n	N/A		NO	DLBSL
	99-65-0	1,3-Dinitrobenzene	ND	ND	UG/L		0/1	1.5E-02	1.5E-02	N/A	3.7E-01 R-n	N/A		NO	DLBSL
	118-96-7	2,4,6-Trinitrotoluene	ND	ND	UG/L		0/1	1.5E-02	1.5E-02	N/A	1.8E+00 R-n	N/A		NO	DLBSL
	35572-78-2	2-Amino-4,6-dinitrotoluene	ND	ND	UG/L		0/1	1.5E-02	1.5E-02	N/A	7.3E+00 R-n	N/A		NO	DLBSL
	88-72-2	2-Nitrotoluene	ND	ND	UG/L		0/1	1.5E-02	1.5E-02	N/A	3.1E-01 R-n	N/A		NO	DLBSL
	99-08-1	3-Nitrotoluene	ND	ND	UG/L		0/1	1.5E-02	1.5E-02	N/A	3.7E-01 R-n	N/A		NO	DLBSL
	19406-51-0	4-Amino-2,6-dinitrotoluene	ND	ND	UG/L		0/1	1.5E-02	1.5E-02	N/A	7.3E+00 R-n	N/A		NO	DLBSL
	99-99-0	4-Nitrotoluene	ND	ND	UG/L		0/1	1.5E-02	1.5E-02	N/A	4.2E+00 R-n	N/A		NO	DLBSL
	2691-41-0	HMX	ND	ND	UG/L		0/1	1.5E-02	1.5E-02	N/A	1.8E+02 R-n	N/A		NO	DLBSL
	55-63-0	Nitroglycerin	ND	ND	UG/L		0/1	3.9E-01	7.7E-01	N/A	3.7E-01 R-n	N/A		YES	DLASL
	14797-73-0	Perchlorate	4.2E+01	4.2E+01	UG/L		1/1	5 - 5	4.2E+01	N/A	2.6E+00 R-n	N/A		YES	ASL
	78-11-5	PETN	ND	ND	UG/L		0/1	3.9E-01	3.9E-01	N/A	N/A	N/A		NO	NTX
	121-82-4	RDX	ND	ND	UG/L		0/1	1.5E-02	1.5E-02	N/A	6.1E-01 R-n	N/A		NO	DLBSL
	479-45-8	Tetryl	1.4E-01 J	1.4E-01 J	UG/L		1/1	1.5E-02	1.4E-01	N/A	1.5E+01 R-n	N/A		NO	BSL
	7429-90-5	Aluminum	1.0E+02	1.0E+02	UG/L		1/1	50 - 50	1.0E+02	N/A	3.7E+03 R-n	N/A		NO	BSL
	7440-36-0	Antimony	ND	ND	UG/L		0/1	2	2.0E+00	N/A	6.4E+02 NR	1.5E+00	R-n	NO	DLBSL
	7440-38-2	Arsenic	ND	ND	UG/L		0/1	1.5	1.5E+00	N/A	1.0E+01 NC	1.4E-01	NR	NO	DLBSL
	7440-39-3	Barium	8.6E+00 J	8.6E+00 J	UG/L		1/1	10 - 10	8.6E+00	N/A	1.0E+03 NC,NR	7.3E+02	R-n	NO	BSL
	7440-41-7	Beryllium	ND	ND	UG/L		0/1	0.5	5.0E-01	N/A	4.0E+00 NR, M	7.3E+00	R-n	NO	DLBSL
	7440-43-9	Cadmium	3.4E-01 J	3.4E-01 J	UG/L		1/1	1.25 - 1.25	3.4E-01	N/A	5.0E+00 NR, M	1.8E+00	R-n	NO	BSL
	7440-70-2	Calcium	4.2E+04	4.2E+04	UG/L		1/1	1250 - 1250	4.2E+04	N/A	N/A	N/A		NO	NUT
	7440-47-3	Chromium	ND	ND	UG/L		0/1	1	1.0E+00	N/A	1.0E+02 NR, M	4.3E-02	R-c	NO	DLBSL
	7440-48-4	Cobalt	ND	ND	UG/L		0/1	2.5	2.5E+00	N/A	1.1E+00 R-n	N/A		YES	DLASL
	7440-50-8	Copper	1.0E+00 J	1.0E+00 J	UG/L		1/1	2.5 - 2.5	1.0E+00	N/A	1.3E+03 NR	1.5E+02	R-n	NO	BSL
	7439-89-6	Iron	7.3E+01	7.3E+01	UG/L		1/1	25 - 25	7.3E+01	N/A	3.0E+02 NR	2.6E+03	R-n	NO	BSL
	7439-92-1	Lead	ND	ND	UG/L		0/1	0.75	7.5E-01	N/A	1.5E+01 AL	N/A		NO	DLBSL
	7439-95-4	Magnesium	1.8E+03	1.8E+03	UG/L		1/1	1250 - 1250	1.8E+03	N/A	N/A	N/A		NO	NUT
	7439-96-5	Manganese	3.8E+00	3.8E+00	UG/L		1/1	3.75 - 3.75	3.8E+00	N/A	2.0E+02 NC	1.0E+02	NR	NO	BSL
	7439-97-6	Mercury	ND	ND	UG/L		0/1	0.2	2.0E-01	N/A	3.0E-01 NR	3.7E-01	R-n	NO	DLBSL
	7440-02-0	Nickel	ND	ND	UG/L		0/1	1.5	1.5E+00	N/A	2.5E+01 NC	4.6E+03	NR	NO	DLBSL
	7440-09-7	Potassium	4.0E+03	4.0E+03	UG/L		1/1	1250 - 1250	4.0E+03	N/A	N/A	N/A		NO	NUT
	7782-49-2	Selenium	ND	ND	UG/L		0/1	1.25	1.3E+00	N/A	4.2E+03 NR	1.8E+01	R-n	NO	DLBSL
	7440-22-4	Silver	ND	ND	UG/L		0/1	0.5	5.0E-01	N/A	1.8E+01 R-n	N/A		NO	DLBSL

Step 1 Screening, OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Site UXO-17

MCB Camp Lejeune, North Carolina

Scenario Timeframe: Current/Future

Medium: Surface Water

Exposure Medium: Surface Water

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	7440-23-5	Sodium	3.7E+03	3.7E+03	UG/L	MR17-SW01-10D	1/1	1250 - 1250	3.7E+03	N/A	N/A	N/A		NO	NUT
	7440-28-0	Thallium	ND	ND	UG/L		0/1	1	1.0E+00	N/A	4.7E-01 NR	N/A		YES	DLASL
	7440-62-2	Vanadium	ND	ND	UG/L		0/1	2.5	2.5E+00	N/A	1.8E+01 R-n	N/A		NO	DLBSL
	7440-66-6	Zinc	1.8E+00 J	1.8E+00 J	UG/L	MR17-SW01-10D	1/1	5 - 5	1.8E+00	N/A	2.6E+04 NR	1.1E+03	R-n	NO	BSL

[1] Minimum/Maximum detected concentrations.

[2] Maximum concentration is used for screening. If chemical was not detected, the maximum detection limit is used for screening.

[3] Background values not available.

[4] Used North Carolina WQS for Human Health (if Human Health value not available used Water Supply value), followed by Federal Ambient Water Quality Criteria, Quality Criteria, Consumption of Organisms (if Consumption of Organisms value not available used Consumption of Water and Organisms value). Where North Carolina WQS or Federal Ambient Water Quality Criteria are not available, used the Tap Water RSL, June, 2011, (based on 1×10^{-6} for carcinogens and noncarcinogens adjusted by dividing by 10).

For mercury, used values for methyl mercury since methylated form of mercury likely to be present in surface water.

[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)
Detection Limit Above Screening Level (DLASL), not quantitatively evaluated in HHRA
Deletion Reason: Below Screening Level (BSL)
Detection Limit Below Screening Level (DLBSL)
No Toxicity Information (NTX)
Essential Nutrient (NUT)

Definitions:

AL = Action Level from Safe Drinking Water Act.

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/
To Be Considered

COPC = Chemical of Potential Concern

M = Safe Drinking Water Act Maximum Contaminant Level (MCL), since the National Recommended Water Quality Criteria (NR) refers to the MCL, value is the MCL.

N/A = Not available

NC = North Carolina Water Quality Standards for Human Health and
Water Supply, 2010.

NR = National Recommended Water Quality Criteria, Consumption of Organisms, or
Consumption of Water and Organisms, 2009.

R = RSL, tap water RSL from Regional Screening Level Table, June 2011,
if based on noncarcinogenic effects, RSL is divided by 10.

R-n = USEPA Regional Screening Level, noncarcinogenic
(therefore, RSL divided by 10, see text)

R-c = USEPA Regional Screening Level, Carcinogenic

R-c* = R-n screening level < 100x R-c screening level

R-c** = R-n screening level < 10x R-c screening level, therefore

R-n screening value/10 used as screening level

Data Qualifiers:

J = Estimated Value

Table 2.6a

Step 2 Screening, Risk Ratio for Surface Water, Maximum Detected Concentration

Site UXO-17

MCB Camp Lejeune, North Carolina

Analyte	Detection Frequency	Maximum Detected Concentration (Qualifier)	Sample	Tap Water RSL	Acceptable Risk Level	Corresponding Hazard Index ^a	Corresponding Cancer Index ^b	Target Organ
Explosives (ug/L)								
Perchlorate	1 / 1	4.2E+01	MR17-SW01-10D	2.6E+01	1	1.6	NA	Thyroid
Cumulative Corresponding Hazard Index ^c						1.6		
Cumulative Corresponding Cancer Risk ^d							NA	
Total Thyroid HI =								1.6

Notes:

Screening level used for Step 2 risk ratio evaluation is the Tap Water RSL, June 2011. The North Carolina WQS for Human Health and Federal Ambient Water Quality Criteria are not risk-based, and are not appropriate for use in Step 2.

^a Corresponding Hazard Index equals maximum detected concentration divided by the SL divided by the acceptable risk level.

^b Corresponding Cancer Risk equals maximum detected concentration divided by the SL divided by the acceptable risk level.

^c Cumulative Corresponding Hazard Index equals sum of Corresponding Hazard Indices for each constituent.

^d Cumulative Corresponding Cancer Risk equals sum of Corresponding Cancer Risks for each constituent.

Constituent selected as COPC if it contributes to an overall Hazard Index by target organ greater than 0.5 or Cumulative Corresponding Cancer Risk greater than 5E-05, otherwise, constituent not selected as COPC.

Constituents selected as COPCs are indicated by shading.

See Section 5.3.4 for risk management discussion that eliminates chromium from consideration as a COPC for surface water.

COPC = Constituent of Potential Concern

HI = Hazard Index

ug/L = micrograms per liter

Table 2.7

Step 1 Screening, OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Site UXO-17

MCB Camp Lejeune, North Carolina

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Sediment	121-14-2	2,4-Dinitrotoluene	ND	ND	MG/KG		0/1	0.04	4.0E-02	N/A	1.6E+00 C*	N/A		NO	DLBSL
	606-20-2	2,6-Dinitrotoluene	ND	ND	MG/KG		0/1	0.04	4.0E-02	N/A	6.1E+00 N	N/A		NO	DLBSL
	98-95-3	Nitrobenzene	ND	ND	MG/KG		0/1	0.04	4.0E-02	N/A	4.8E+00 C*	N/A		NO	DLBSL
	99-35-4	1,3,5-Trinitrobenzene	ND	ND	MG/KG		0/1	0.04	4.0E-02	N/A	2.2E+02 N	N/A		NO	DLBSL
	99-65-0	1,3-Dinitrobenzene	ND	ND	MG/KG		0/1	0.0419	4.2E-02	N/A	6.1E-01 N	N/A		NO	DLBSL
	118-96-7	2,4,6-Trinitrotoluene	ND	ND	MG/KG		0/1	0.04	4.0E-02	N/A	3.6E+00 C**	N/A		NO	DLBSL
	35572-78-2	2-Amino-4,6-dinitrotoluene	ND	ND	MG/KG		0/1	0.04	4.0E-02	N/A	1.5E+01 N	N/A		NO	DLBSL
	88-72-2	2-Nitrotoluene	ND	ND	MG/KG		0/1	0.04	4.0E-02	N/A	2.9E+00 C*	N/A		NO	DLBSL
	99-08-1	3-Nitrotoluene	ND	ND	MG/KG		0/1	0.04	4.0E-02	N/A	6.1E-01 N	N/A		NO	DLBSL
	19406-51-0	4-Amino-2,6-dinitrotoluene	ND	ND	MG/KG		0/1	0.04	4.0E-02	N/A	1.5E+01 N	N/A		NO	DLBSL
	99-99-0	4-Nitrotoluene	ND	ND	MG/KG		0/1	0.04	4.0E-02	N/A	2.4E+01 C**	N/A		NO	DLBSL
	2691-41-0	HMX	ND	ND	MG/KG		0/1	0.04	4.0E-02	N/A	3.8E+02 N	N/A		NO	DLBSL
	55-63-0	Nitroglycerin	ND	ND	MG/KG		0/1	0.2	2.0E-01	N/A	6.1E-01 N	N/A		NO	DLBSL
	14797-73-0	Perchlorate	1.0E-03 J	1.0E-03 J	MG/KG	MR17-SD01-10D	1/1	0.00656 - 0.00656	1.0E-03	N/A	5.5E+00 N	N/A		NO	BSL
	78-11-5	PETN	ND	ND	MG/KG		0/1	0.2	2.0E-01	N/A	1.2E+01 C**	N/A		NO	DLBSL
	121-82-4	RDX	ND	ND	MG/KG		0/1	0.04	4.0E-02	N/A	5.6E+00 C*	N/A		NO	DLBSL
	479-45-8	Tetryl	ND	ND	MG/KG		0/1	0.04	4.0E-02	N/A	2.4E+01 N	N/A		NO	DLBSL
	7429-90-5	Aluminum	1.1E+04	1.1E+04	MG/KG	MR17-SD01-10D	1/1	13.1 - 13.1	1.1E+04	N/A	7.7E+03 N	N/A		YES	ASL
	7440-36-0	Antimony	ND	ND	MG/KG		0/1	0.522	5.2E-01	N/A	3.1E+00 N	N/A		NO	DLBSL
	7440-38-2	Arsenic	1.9E+00	1.9E+00	MG/KG	MR17-SD01-10D	1/1	0.653 - 0.653	1.9E+00	N/A	3.9E-01 C*	N/A		YES	ASL
	7440-39-3	Barium	2.6E+01	2.6E+01	MG/KG	MR17-SD01-10D	1/1	2.61 - 2.61	2.6E+01	N/A	1.5E+03 N	N/A		NO	BSL
	7440-41-7	Beryllium	2.1E-01 J	2.1E-01 J	MG/KG	MR17-SD01-10D	1/1	0.326 - 0.326	2.1E-01	N/A	1.6E+01 N	N/A		NO	BSL
	7440-43-9	Cadmium	3.8E-01	3.8E-01	MG/KG	MR17-SD01-10D	1/1	0.326 - 0.326	3.8E-01	N/A	7.0E+00 N	N/A		NO	BSL
	7440-70-2	Calcium	1.2E+04	1.2E+04	MG/KG	MR17-SD01-10D	1/1	326 - 326	1.2E+04	N/A	N/A	N/A		NO	NUT
	7440-47-3	Chromium	1.2E+01	1.2E+01	MG/KG	MR17-SD01-10D	1/1	0.653 - 0.653	1.2E+01	N/A	2.9E-01 C	N/A		YES	ASL
	7440-48-4	Cobalt	1.2E+00	1.2E+00	MG/KG	MR17-SD01-10D	1/1	0.816 - 0.816	1.2E+00	N/A	2.3E+00 N	N/A		NO	BSL
	7440-50-8	Copper	4.3E+00	4.3E+00	MG/KG	MR17-SD01-10D	1/1	0.653 - 0.653	4.3E+00	N/A	3.1E+02 N	N/A		NO	BSL
	7439-89-6	Iron	5.2E+03	5.2E+03	MG/KG	MR17-SD01-10D	1/1	6.53 - 6.53	5.2E+03	N/A	5.5E+03 N	N/A		NO	BSL
	7439-92-1	Lead	1.3E+01	1.3E+01	MG/KG	MR17-SD01-10D	1/1	0.196 - 0.196	1.3E+01	N/A	4.0E+02 N	N/A		NO	BSL
	7439-95-4	Magnesium	5.4E+02	5.4E+02	MG/KG	MR17-SD01-10D	1/1	326 - 326	5.4E+02	N/A	N/A	N/A		NO	NUT
	7439-96-5	Manganese	1.7E+01	1.7E+01	MG/KG	MR17-SD01-10D	1/1	0.979 - 0.979	1.7E+01	N/A	1.8E+02 N	N/A		NO	BSL
	7439-97-6	Mercury	5.0E-02	5.0E-02	MG/KG	MR17-SD01-10D	1/1	0.0433 - 0.0433	5.0E-02	N/A	2.3E+00 N	N/A		NO	BSL
	7440-02-0	Nickel	4.2E+00	4.2E+00	MG/KG	MR17-SD01-10D	1/1	0.653 - 0.653	4.2E+00	N/A	1.5E+02 N	N/A		NO	BSL

Table 2.7

Step 1 Screening, OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Site UXO-17

MCB Camp Lejeune, North Carolina

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	7440-09-7	Potassium	4.4E+02	4.4E+02	MG/KG	MR17-SD01-10D	1/1	326 - 326	4.4E+02	N/A	N/A	N/A		NO	NUT
	7782-49-2	Selenium	ND	ND	MG/KG		0/1	0.51	5.1E-01	N/A	3.9E+01	N	N/A	NO	DLBSL
	7440-22-4	Silver	ND	ND	MG/KG		0/1	0.131	1.3E-01	N/A	3.9E+01	N	N/A	NO	DLBSL
	7440-23-5	Sodium	ND	ND	MG/KG		0/1	196	2.0E+02	N/A	N/A	N/A		NO	NUT
	7440-28-0	Thallium	ND	ND	MG/KG		0/1	0.326	3.3E-01	N/A	7.8E-02	N	N/A	YES	DLASL
	7440-62-2	Vanadium	1.7E+01	1.7E+01	MG/KG	MR17-SD01-10D	1/1	0.816 - 0.816	1.7E+01	N/A	3.9E+01	N	N/A	NO	BSL
	7440-66-6	Zinc	2.7E+01	2.7E+01	MG/KG	MR17-SD01-10D	1/1	1.31 - 1.31	2.7E+01	N/A	2.3E+03	N	N/A	NO	BSL

[1] Minimum/Maximum detected concentrations.

[2] Maximum concentration is used for screening.

[3] Background values not available.

[4] Oak Ridge National Laboratory (ORNL). June , 2011. Regional Screening Levels for Chemical Contaminants at Superfund Sites. http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm. Residential soil RSLs. RSLs based on noncarcinogenic effects divided by 10 to account for exposure to more than on constituent that effects the same target organ. RSL value for Chromium(VI) used as surrogate for chromium. The soil value of 400 mg/kg for lead is from the Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities, USEPA, July 14, 1994.

[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)
Detection Limit Above Screening Level (DLASL), not quantitatively evaluated in HHRA
Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)
Detection Limit Below Screening Level (DLBSL)
Below Background Value (BBK)

Definitions:

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/
To Be Considered

COPC = Chemical of Potential Concern

N/A = Not available

Data Qualifiers:

J = Estimated Value

Screening Toxicity:

C = Carcinogenic

C* = N screening level < 100x C screening level, C screening value
used as screening level

C** = N screening level < 10x C screening level, therefore
N screening value/10 used as screening level

N = Noncarcinogenic

Table 2.8a

Step 2 Screening, Risk Ratio Screening for Sediment, Maximum Detected Concentration

UXO-17

MCB Camp Lejeune, North Carolina

Analyte	Detection Frequency	Maximum Detected Concentration (Qualifier)	Sample Location of Maximum Detected Concentration	Residential Soil RSL	Acceptable Risk Level	Corresponding Hazard Index ^a	Corresponding Cancer Risk ^b	Target Organ
Metals (mg/kg)								
Aluminum	1 / 1	1.1E+04	MR17-SD01-10D	7.7E+04	1	0.1	NA	Neurological, Developmental
Arsenic	1 / 1	1.9E+00	MR17-SD01-10D	3.9E-01	1E-06	NA	5E-06	NA
Chromium	1 / 1	1.2E+01	MR17-SD01-10D	2.9E-01	1E-06	NA	4E-05	NA
Cumulative Corresponding Hazard Index^c						0.1		
Cumulative Corresponding Cancer Risk^d							5E-05	
							Total Developmental HI =	0.1
							Total Neurological HI =	0.1

Notes:^a Corresponding Hazard Index equals maximum detected concentration divided by the RSL divided by the acceptable risk level.^b Corresponding Cancer Risk equals maximum detected concentration divided by the RSL divided by the acceptable risk level.^c Cumulative Corresponding Hazard Index equals sum of Corresponding Hazard Indices for each constituent.^d Cumulative Corresponding Cancer Risk equals sum of Corresponding Cancer Risks for each constituent.

Constituent selected as COPC if it contributes to an overall Hazard Index by target organ greater than 0.5 or Cumulative Corresponding Cancer Risk greater than 5E-05, otherwise, constituent not selected as COPC.

Constituents selected as COPCs are indicated by shading.

COPC = Constituent of Potential Concern

mg/kg = milligrams per kilogram

NA = Not available/not applicable.

Appendix K
Ecological Checklist and Risk Screening Tables

CHECKLIST FOR ECOLOGICAL ASSESSMENTS/SAMPLING

I. SITE LOCATION

1. Site Name UXO-17 – Firing Position 2
US EPA ID Number _____
Location United States Marine Corps Base (MCB), Camp Lejeune
County Onslow City Jacksonville State NC
2. Latitude 34°41'36.01" N Longitude 77°19'11.93" W
3. Attach site maps, including a topographical map, a diagram which illustrates the layout of the facility (e.g., site boundaries, structures, etc.), and maps showing all habitat areas identified in Section III of the checklist. Also, include maps which illustrate known and suspected release areas, sampling locations and any other important features, if available. Figures 3-2, 3-5, and 3-5 of this report provide site boundaries and sampling locations.

II. SITE CHARACTERIZATION

1. Indicate the approximate area of the site (i.e., acres or sq. ft.) Approximately 16 acres
2. Is this the first site visit? Yes ☒ No ☒ Sampling conducted in 2008 and 2010
If no, attach trip report of previous site visit(s), if available.
3. Are aerial or other site photographs available? ☒ Yes ☐ No
If yes, please attach any available photo(s) to the site map to the report.
Figure 2-1 of this report.
4. Provide an approximate breakdown of the land uses on the site:

_____ % Heavy Industrial	_____ % Light Industrial	_____ % Urban
_____ % Residential	_____ % Rural	_____ % Agricultural ^b
_____ % Recreational ^a	<u>95</u> % Undisturbed	<u>5</u> % Other ^c

^aFor recreational areas, please describe the use of the area (e.g., park, playing field, etc).

^bFor agricultural areas, please list the crops and/or livestock which are present.

^cFor areas designated as "other," please describe the use of the area.

A small pond and several barren areas are located in the south central portion of the site. The barren areas are likely caused by off-road vehicular traffic.

5. Provide an approximate breakdown of the land uses in the area surrounding the site. Indicate the radius (in miles) of the area described: 0.5 mile radius

____ % Heavy Industrial	<u>40</u> % Light Industrial	____ % Urban
____ % Residential	____ % Rural	____ % Agricultural ^b
____ % Recreational ^a	<u>60</u> % Undisturbed	____ % Other ^c

^aFor recreational areas, please describe the use of the area (e.g., park, playing field, golf course, etc).

^bFor agricultural areas, please list the crops and/or livestock which are present.

^cFor areas designated as "other," please describe the use of the area.

6. Has any movement of soil taken place at the site? X Yes ☐ No
If yes, indicate the likely source of the disturbance, (e.g., erosion, agricultural, mining, industrial activities, removals, etc.) degree of disturbance, and estimate when these events occurred. The site was formerly used as a borrow pit and as a municipal dumping area.
7. Do any sensitive environmental areas exist adjacent to or in proximity to the site, (e.g. Federal and State parks, National and State monuments, wetlands)? *Remember, flood plains and wetlands are not always obvious; do not answer "no" without confirming information. See Table 1 for a list of contacts.* Yes, an active red-cockaded woodpecker area is located approximately 0.6 miles southeast of the site.

Please provide the source(s) of information used to identify these sensitive areas, and indicate their general location on the site map.
MCB Camp Lejeune GIS Layer for Wetlands (NWI).

United States Marine Corps (USMC). 2006. Integrated Natural Resource Management Plan (INRMP) 2007-2011, Marine Corps Base Camp Lejeune, Onslow County, North Carolina. November.

8. What type of facility is located at the site?

☐ Chemical ☐ Manufacturing ☐ Mixing

☐ Waste Disposal ☒ Other (specify)

The site is predominately forested and open field land

9. Identify the contaminants of potential concern (COPCs) at the site. If known, include the maximum contaminant levels. Please indicate the source of data cited (e.g., RFI, confirmatory sampling, etc).

SVOCs, explosives, and inorganics were detected in the surface soil, subsurface soil, and groundwater. Explosives and inorganics were detected in surface water and sediment.

10. Check any potential routes of off-site migration of contaminants observed at the site:
- ☐ Swales X Depressions (small pond) ☐ Drainage Ditches
- ☐ Runoff ☐ Windblown Particulates ☐ Vehicular Traffic
- X Other (specify): Groundwater
11. Indicate the approximate depth to groundwater (in feet below ground surface [(bgs)]).
Depth to groundwater ranges from approximately 0.5 to 2 feet bgs.
12. Indicate the direction of groundwater flow (e.g., north, southeast, etc.)
Groundwater generally flows northwest toward Wallace Creek.
13. Is the direction of surface runoff apparent from site observations? X Yes ☐ No
If yes, to which of the following does the surface runoff discharge? Indicate all that apply.
- X Surface water (small pond) X Groundwater ☐ Sewer
- ☐ Collection Impoundment
14. Is there a navigable water body or tributary to a navigable water body?
☐ Yes X No
15. Is there a water body anywhere on or in the vicinity of the site? If yes, also complete Section III.B.1: Aquatic Habitat Checklist -- Non-Flowing Systems and/or Section III.B.2: Aquatic Habitat Checklist -- Flowing Systems.
- X Yes un-named small pond ☐ No
16. Is there evidence of flooding? ☐ Yes X No
Wetlands and flood plains are not always obvious. Do not answer "no" without confirming information. If yes, complete Section III.C: Wetland Habitat Checklist.
17. If a field guide was used to aid any of the identifications, please provide a reference. Also, estimate the time spent identifying fauna. (Use a blank sheet if additional space is needed for text.)
18. Are any threatened and/or endangered species (plant or animal) known to inhabit the area of the site? X Yes ☐ No
If yes, you are required to verify this information with the U.S. Fish and Wildlife Service or other appropriate agencies (see Table 1 for a list of contacts). If species' identities are

known, please list them next. An active red-cockaded woodpecker area is located approximately 0.6 miles southeast of the site.

19. Record weather conditions at the site at the time of the site visit when information for completion of this checklist was prepared:

DATE November 2010

Temperature (°C/°F) 50

Wind (direction/speed):

Cloud Cover: Partly cloudy

Normal daily high temperature (°C/°F):

Precipitation (rain, snow):

20. Describe reasonable and likely future land and/or water use(s) at the site.
A landfill expansion MILCON project is proposed for the site.
21. Describe the historical uses of the site. Include information on chemical releases that may have occurred as a result of previous land uses. For each chemical release, provide information on the form of the chemical released (i.e., solid, liquid, vapor) and the known or suspected causes or mechanism of the release (i.e., spills, leaks, material disposal, dumping, explosion, etc.).
Site UXO-17 was reportedly used as a firing position from the 1950s through at least 1985 (CH2M HILL, 2010). During this time, 105 millimeter (mm) and 155 mm howitzers were used to fire practice rounds into the K-2 and G-10 Impact Areas (CH2M HILL, 2010). Additional weapons testing of 4.2-inch mortars, 175 mm guns, 8-inch howitzers, and 120 mm mortars were also likely conducted onsite, with unused projectile propellant being burned on the ground. No chemical warfare materiel (CWM) was reported to have been used at this site.

CH2M HILL, 2010. *Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Preliminary Assessment/Site Inspection; Unexploded Ordnance (UXO) Site UXO-17 (ASR#2.212), Former Firing Position 2, Marine Corps Base Camp Lejeune Jacksonville, North Carolina.* November.

22. Identify the media (e.g., soil [surface or subsurface], surface water, air, groundwater) which are known or suspected to contain COCs.
According to the data, SVOCs, explosives, and inorganics were detected in the surface soil, subsurface soil, and groundwater. Explosives and inorganics were detected in the surface water and sediment onsite.

II.A. SUMMARY OF OBSERVATIONS AND SITE SETTING

Include information on significant source areas and migration pathways that are likely to constitute complete exposure pathways.

Soil to groundwater, soil to surface water, and surface water to sediment exposure pathways may be complete.

Checklist Completed by Sara Kent

Affiliation CH2M HILL

Author Assisted by _____

Date 05/06/11

III. HABITAT EVALUATION

III.A Terrestrial Habitat Checklist

III.A.1 Wooded

Are any wooded areas on or adjacent to the site? X Yes ☐ No

If yes, indicate the wooded area on the attached site map and answer the following questions. If more than one wooded area is present on or adjacent to the site, make additional copies of the following questions and fill out for each individual wooded area. Distinguish between wooded areas by using names or other designations, and clearly identify each area on the site map.

If no, proceed to Section III.A.2: Shrub/Scrub

Wooded Area Questions

X On-site ☐ Off-site

Name or Designation: UXO-17 – Firing Range 2

1. Estimate the approximate size of the wooded area (50%, approximately 8 acres)
Please identify what information was used to determine the wooded area of the site (e.g., direct observation, photos, etc). Based on field observations and aerial photography available through Google Earth.



2. Indicate the dominant type of vegetation in the wooded area. Provide photographs, if available.
 - ☐ Evergreen
 - ☐ Deciduous
 - X MixedDominant plant species, if known: Loblolly pine (*Pinus taeda*)

3. Estimate the vegetation density of the wooded area.

- ☐ Dense (i.e., greater than 75% vegetation)
- ☐ Moderate (i.e., 25% to 75% vegetation)
- ☒ Sparse (i.e., less than 25% vegetation)

4. Indicate the predominant size of the trees at the site. Use diameter at breast height.

- ☒ 0-6 inches
- ☐ 6-12 inches
- ☐ >12 inches
- ☐ No single size range is predominant

5. Specify type of understory present, if known. Provide a photograph, if available. Grasses and large shrub understory.

III.A.2 Shrub/Scrub

Are any shrub/scrub areas on or adjacent to the site? ☐ Yes ☒ No

If yes, indicate the shrub/scrub area on the attached site map and answer the following questions. If more than one shrub/scrub area is present on or adjacent to the site, make additional copies of the following questions and fill out for each individual shrub/scrub area. Distinguish between shrub/scrub areas, using names or other designations, and clearly identify each area on the site map.

If no, proceed to Section III.A.3: Open Field

III.A.3 Open Field

Are any open field areas on or adjacent to the site? ☒ Yes ☐ No

If yes, indicate the open field area on the attached site map and answer the following questions. If more than one open field area is present on or adjacent to the site, make additional copies of the following questions and fill out for each individual open field area. Distinguish between open field areas, using names or other designations, and clearly identify each area on the site map.

If no, proceed to Section III.A.4: Miscellaneous

Open Field Area Questions

☒ On-site ☐ Off-site

Name or Designation: UXO-17 – Firing Range 2

1. Estimate the approximate size of the open field area (50%, approximately 8 acres) Please identify what information was used to determine the open field area of the site. Based on site observation and aerial photography available through Google Earth.



2. Indicate the dominant type of vegetation present, if known. Unknown
3. Estimate the vegetation density of the open field area.
 - ☐ Dense (i.e., greater than 75% vegetation)
 - ☒ Moderate (i.e., 25% to 75% vegetation)
 - ☐ Sparse (i.e., less than 25% vegetation)
4. Indicate the approximate average height of the dominant plant: 6-12 inches

III.A.4 Miscellaneous

Are other types of terrestrial habitats present at the site, other than woods, scrub/shrub and open field? ☐ Yes ☒ No

If yes, indicate the area on the attached site map and answer the following questions. If more than one of these areas are present on or adjacent to the site, make additional copies of the following questions and fill out for each individual area. Distinguish between areas by using names or other designations. Clearly identify each area on the site map.

If no, proceed to Section III.B: Aquatic Habitats.

III.B Aquatic Habitats

Note: Aquatic systems are often associated with wetland habitats. Please refer to Section III.C, Wetland Habitat Checklist.

III.B.1 Non-Flowing Systems

Are any non-flowing aquatic features (such as ponds or lakes) located at or adjacent to the site?

☒ Yes ☐ No

If yes, indicate the aquatic feature on the attached site map and answer the following questions regarding the non-flowing aquatic features. If more than one non-flowing aquatic feature is present on or adjacent to the site, make additional copies of the following questions and fill out for each individual aquatic feature. Distinguish between aquatic features by using names or other designations. Clearly identify each area on the site map.

If no, proceed to Section III.B.2: Flowing Systems

Non-Flowing Aquatic Feature Questions

☒ On-site ☐ Off-site

Name or Designation: Small un-named pond

1. Indicate the type of aquatic feature present:

- ☐ Natural (e.g., pond or lake)
☒ Man-made (e.g., impoundment, lagoon, canal, etc.)

2. Estimate the approximate size of the water body (in acres or sq. ft.) 20 ft wide

3. If known, indicate the depth of the water body (in ft. or in.). 1 ft.

4. If a water body is present, what are its known uses (e.g.: recreation, navigation, etc.)?
Unknown

5. Is aquatic vegetation present? ☐ Yes ☒ No
If yes, please identify the type of vegetation present if known.

☐ Emergent ☐ Submergent ☐ Floating

6. Indicate the general composition of the bottom substrate. Mark all sources that apply from the following list.

<input type="checkbox"/> Bedrock	<input checked="" type="checkbox"/> Sand	<input type="checkbox"/> Concrete
<input type="checkbox"/> Boulder (>10 in.)	<input checked="" type="checkbox"/> Silt	<input checked="" type="checkbox"/> Debris
<input type="checkbox"/> Cobble (2.5 - 10 in.)	<input type="checkbox"/> Clay	<input type="checkbox"/> Detritus
<input type="checkbox"/> Gravel (0.1 - 2.5 in.)	<input type="checkbox"/> Muck (fine/black)	
<input type="checkbox"/> Other (please specify):_____		

7. Indicate the source(s) of the water in the aquatic feature. Mark all sources that apply from the following list.

<input type="checkbox"/> River/Stream/Creek
<input checked="" type="checkbox"/> Groundwater
<input type="checkbox"/> Industrial Discharge
<input checked="" type="checkbox"/> Surface Runoff
<input type="checkbox"/> Other (please specify):_____

8. Is there a discharge from the facility to the aquatic feature? ☒ Yes ☐ No

If yes, describe the origin of each discharge and its migration path.

The site is generally flat, but around the pond the topography is slightly sloped toward the water. The migration pathways would be groundwater and surface runoff.

9. Does the aquatic feature discharge to the surrounding environment? ☐ Yes ☒ No

If yes, indicate the features from the following list into which the aquatic feature discharges, and indicate whether the discharge occurs onsite or offsite:

<input type="checkbox"/> River/Stream/Creek	<input type="checkbox"/> on-site	<input type="checkbox"/> off-site
<input type="checkbox"/> Groundwater	<input type="checkbox"/> on-site	<input type="checkbox"/> off-site
<input type="checkbox"/> Wetland	<input type="checkbox"/> on-site	<input type="checkbox"/> off-site
<input type="checkbox"/> Impoundment	<input type="checkbox"/> on-site	<input type="checkbox"/> off-site
<input type="checkbox"/> Other (please describe)_____		

10. Identify any field measurements and observations of water quality that were made. Provide the measurement and the units of measure in the appropriate space below:

_____ Area

_____ Depth (average)

_____ Temperature (depth of water where the reading was taken)_____

- _____ pH
- _____ Dissolved oxygen
- _____ Salinity
- _____ Turbidity (clear, slightly turbid, turbid, opaque)
(Secchi disk depth_____)
- _____ Other (specify)

11. Describe observed color and area of coloration. None observed during the site visit.
12. Mark the open-water, non-flowing system on the site map attached to this checklist.
13. What observations, if any, were made at the water body regarding the presence and/or absence of benthic macroinvertebrates, fish, birds, mammals, etc? None observed during the site visit.

III.B.2 Flowing Systems

Note: Aquatic systems are often associated with wetland habitats. Please refer to Section III.C, Wetland Habitat Checklist.

Are any flowing aquatic features (such as streams or rivers) located at or adjacent to the site?

☐ Yes ☒ No

If yes, indicate the system on the attached site map and answer the following questions regarding the flowing system. If more than one flowing system is present on or adjacent to the site, make additional copies of the following questions and complete one set for each individual aquatic feature. Distinguish between flowing systems by using names or other designation. Clearly identify each area on the site map

If no, proceed to Section III.C: Wetlands Habitats.

III.C Wetland Habitats

Are any wetland¹ areas such as marshes or swamps on or adjacent to the site?

☐ Yes ☒ No

If yes, indicate the wetland area on the attached site map and answer the following questions regarding the wetland area. If more than one wetland area is present on or adjacent to the site, make additional copies of the following questions and fill out one for each individual wetland area. Distinguish between wetland areas by using names or other designations (such as location). Clearly identify each area on the site map. Also, obtain and attach a National Wetlands Inventory Map (or maps) to illustrate each wetland area.

Identify the sources of the observations and information (e.g., National Wetland Inventory, Federal or State Agency, USGS topographic maps) used to make the determination whether or not wetland areas are present.

MCB, Camp Lejeune, North Carolina 2007-2011 Integrated Natural Resource Management Plan (INRMP), 2006.

MCB Camp Lejeune GIS Layer for Wetlands (NWI)

If no wetland areas are present, proceed to Section III.D: Sensitive Environments and Receptors.

¹Wetlands are defined in 40 CFR §232.2 as “Areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” Examples of typical wetlands plants include: cattails, cordgrass, willows and cypress trees. National wetland inventory maps may be available at <http://nwi.fws.gov>. Additional information on wetland delineation criteria is also available from the Army Corps of Engineers.

III.D Sensitive Environments and Receptors

1. Do any other potentially sensitive environmental areas² exist adjacent to or within one-half mile of the site? If yes, list these areas and provide the source(s) of information used to identify sensitive areas. *Do not answer "no" without confirmation from the U.S. Fish and Wildlife Service and other appropriate agencies. See Table 1 for a list of contacts.*
No, but an active red-cockaded woodpecker area is located approximately 0.6 miles southeast of the site. This information is based on the MCB Camp Lejeune INRMP (INRMP, 2006).
2. Are any areas on or near (i.e., within one-half mile) the site owned or used by local tribes? If yes, describe.
No
3. Does the site serve or potentially serve as a habitat, foraging area or refuge by rare, threatened, endangered, candidate and/or proposed species (plants or animals), or any otherwise protected species? If yes, identify species. *This information should be obtained from the U.S. Fish and Wildlife Service and other appropriate agencies. See Table 1 for a list of contacts.*
No
4. Is the site potentially used as a breeding, roosting or feeding area by migratory bird species? If yes, identify which species.
Unknown.
5. Is the site used by any ecologically³, recreationally or commercially important species? If yes, explain.
No

² Areas that provide unique and often protected habitat for wildlife species. These areas are typically used during critical life stages such as breeding, hatching, rearing of young and overwintering. Refer to Table 2 at the end of this document for examples of sensitive environments.

³ Ecologically important species include populations of species which provide a critical (i.e., not replaceable) food resource for higher organisms. These species' functions would not be replaced by more tolerant species or perform a critical ecological function (such as organic matter decomposition) and will not be replaced by other species. Ecologically important species include pest and opportunistic species that populate an area if they serve as a food source for other species, but do not include domesticated animals (e.g., pets and livestock) or plants/animals whose existence is maintained by continuous human interventions (e.g., fish hatcheries, agricultural crops, etc).

IV. EXPOSURE PATHWAY EVALUATION

1. Do existing data provide sufficient information on the nature, rate and extent of contamination at the site?

☒ Yes
☐ No
☐ Uncertain

Please provide an explanation for your answer.

Data were collected from each medium across the site, providing representative samples for the area of concern.

2. Do existing data provide sufficient information on the nature, rate and extent of contamination in offsite affected areas?

☒ Yes
☐ No
☐ Uncertain
☐ No offsite contamination

Please provide an explanation for your answer.

See #1 of this section.

3. Do existing data address potential migration pathways of contaminants at the site?

☒ Yes
☐ No
☐ Uncertain

Please provide an explanation for your answer.

Data were collected based on potential migration pathways (i.e. overland flow, leaching, and groundwater transport).

4. Do existing data address potential migration pathways of contaminants in offsite affected areas?

☐ Yes
☐ No
☐ Uncertain
☒ No offsite contamination

Please provide an explanation for your answer. Concentration of COPCs in groundwater are not expected to be high enough to cause any discernable impact to Wallace Creek and the New River.

5. Are there visible indications of stressed habitats or receptors on or near (i.e., within one-half mile) the site that may be the result of a chemical release? If yes, explain. Attach photographs if available.

No

6. Is the location of the contamination such that receptors might be reasonably expected to come into contact with it? For soil, this means contamination in the soil 0 to 1 foot below ground surface (bgs). If yes, explain.

Yes. SVOCs, explosives, and inorganics were detected in the soil, surface water, and sediment where receptors may be exposed.

7. Are receptors located in or using habitats where chemicals exist in air, soil, sediment or surface water? If yes, explain.

None were observed during the site visit.

8. Could chemicals reach receptors via groundwater? Can chemicals leach or dissolve to groundwater? Are chemicals mobile in groundwater? Does groundwater discharge into receptor habitats? If yes, explain.

Water level measurement data suggests that shallow groundwater within the vicinity of the site generally flows northwest towards Wallace Creek and the New River. Should the low level concentrations in groundwater migrate toward the New River, concentrations will likely dilute and attenuate to the extent that aquatic receptors would not be at risk.

9. Could chemicals reach receptors through runoff or erosion? Answer the following questions.

Runoff into the un-named pond could reach receptors.

10. What is the approximate distance from the contaminated area to the nearest watercourse?

- ☒ 0 feet (i.e., contamination has reached a watercourse)
- ☐ 1-10 feet
- ☐ 11-20 feet
- ☐ 21-50 feet
- ☐ 51-100 feet
- ☐ 101-200 feet
- ☐ > 200 feet
- ☐ > 500 feet
- ☐ > 1000 feet

11. What is the slope of the ground in the contaminated area?

- ☒ 0-10%
- ☐ 10-30%
- ☐ > 30%

12. What is the approximate amount of ground and canopy vegetative cover in the contaminated area?

- ☐ < 25%
- ☒ 25-75%
- ☐ > 75%

13. Is there visible evidence of erosion (e.g., a rill or gully) in or near the contaminated area?

- ☐ Yes
- ☒ No
- ☐ Do not know

14. Do any structures, pavement or natural drainage features direct run-on flow (i.e., surface flows originating upstream or uphill from the area of concern) into the contaminated area?

- ☐ Yes
- ☐ No
- ☒ Do not know

15. Could chemicals reach receptors through the dispersion of contaminants in air (e.g., volatilization, vapors, fugitive dust)? If yes, explain.

Yes, contaminants were detected in the surface soil. When the proposed MILCON construction commences, dust may be a concern.

16. Could chemicals reach receptors through migration of non-aqueous phase liquids (NAPLs)? Is a NAPL present at the site that might be migrating towards receptors or habitats? Could NAPL discharge contact receptors or their habitat?

No